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THIRD SERIES VOL 66 NUMBER 10 AUGUST 1959

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The Guggenheim Museum, New York. Architect: Frank Lloyd Wright *photo: Ezra Stoller*

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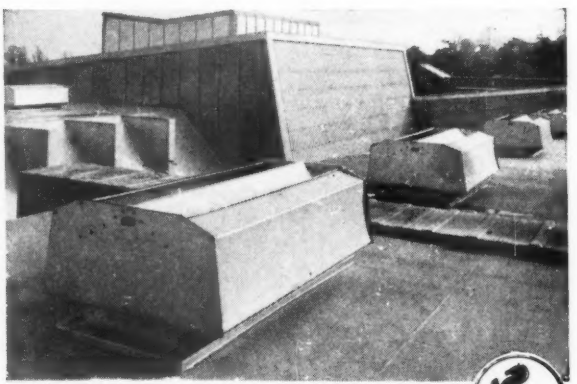

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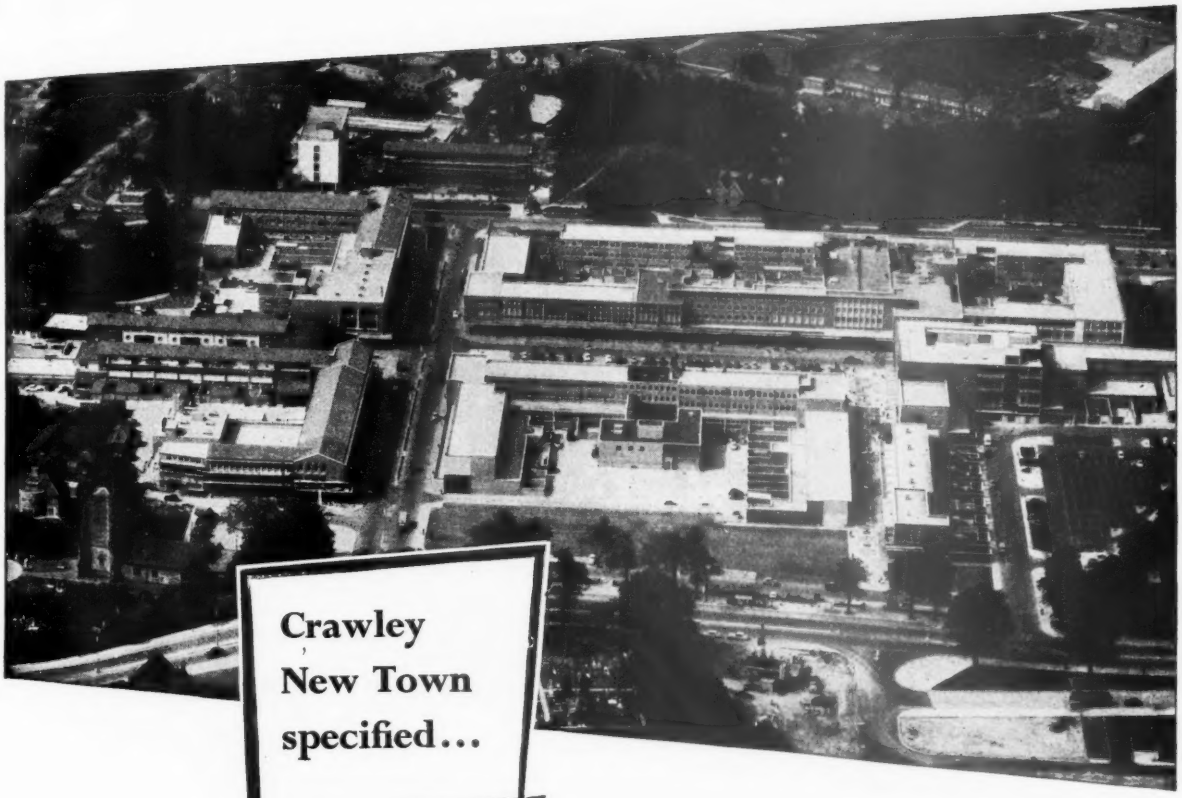

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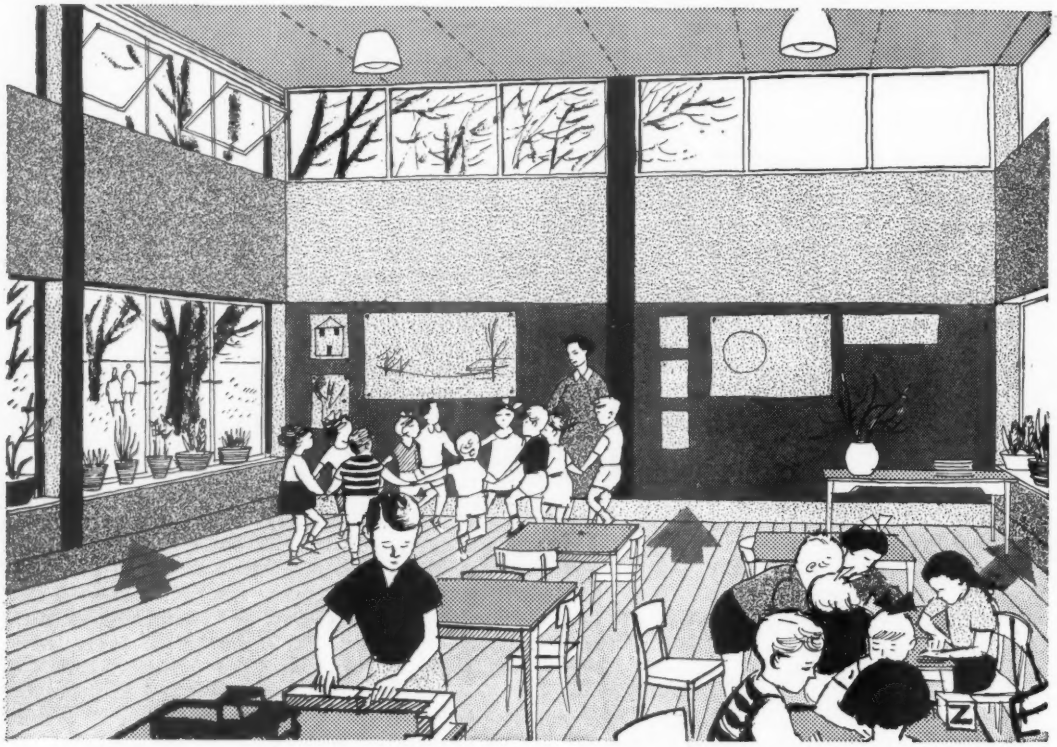

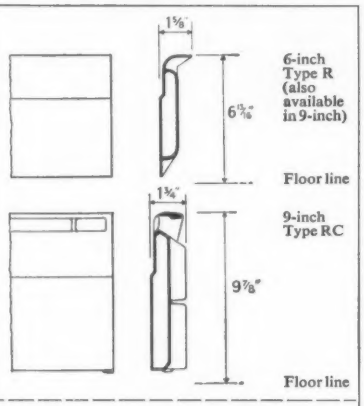

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Crane Skirting Heating panels are made in two types. Used here is the 9-inch Type R (radiant) illustrated above which is also made in the 6-inch size for smaller heat requirements. Type RC (radiant-convector) is made only in the 9-inch size. All panels are in 2-ft. and 1-ft. lengths and are made of cast iron, which gives them considerable resistance to accidental damage. The operations of calculating heat requirements and designing the pipework are in principle no different from those for conventional radiator heating systems.

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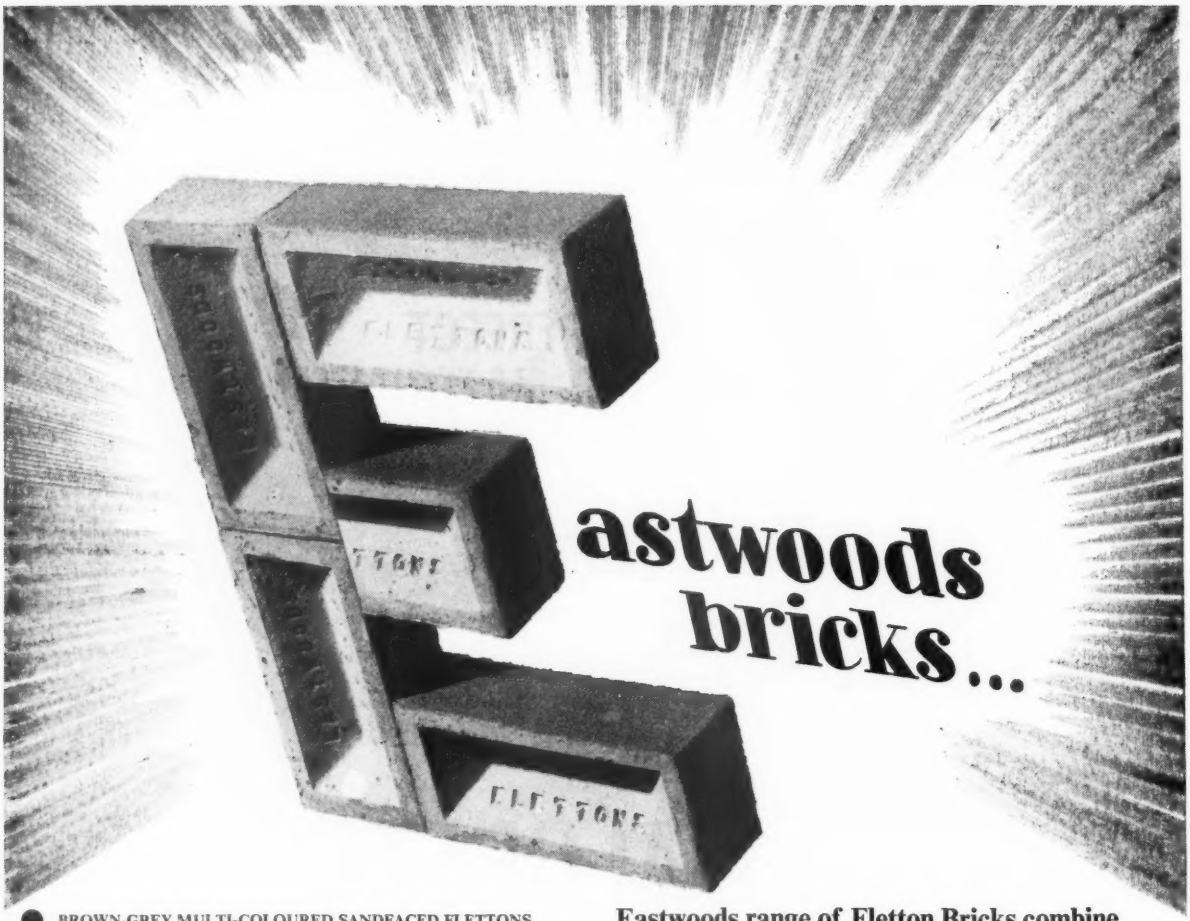

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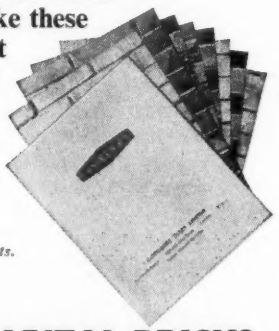

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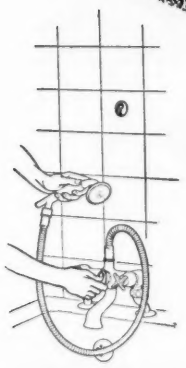

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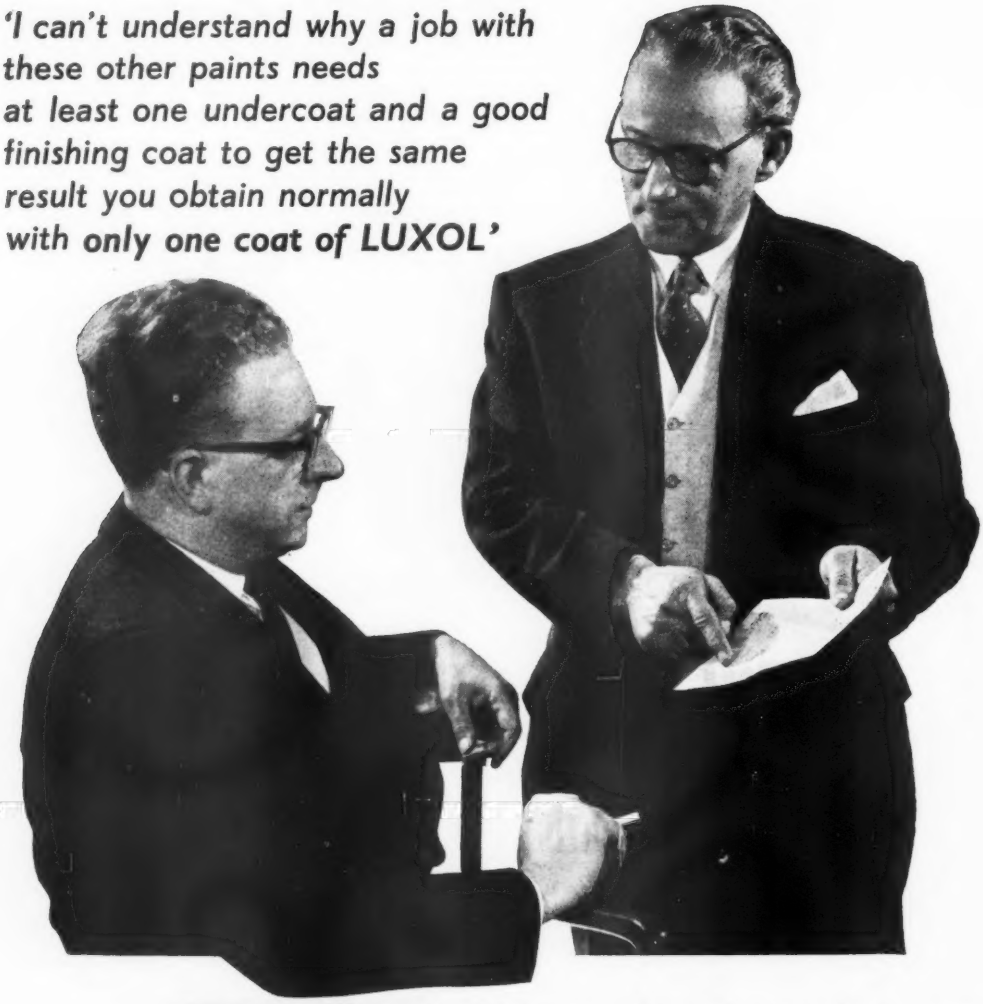

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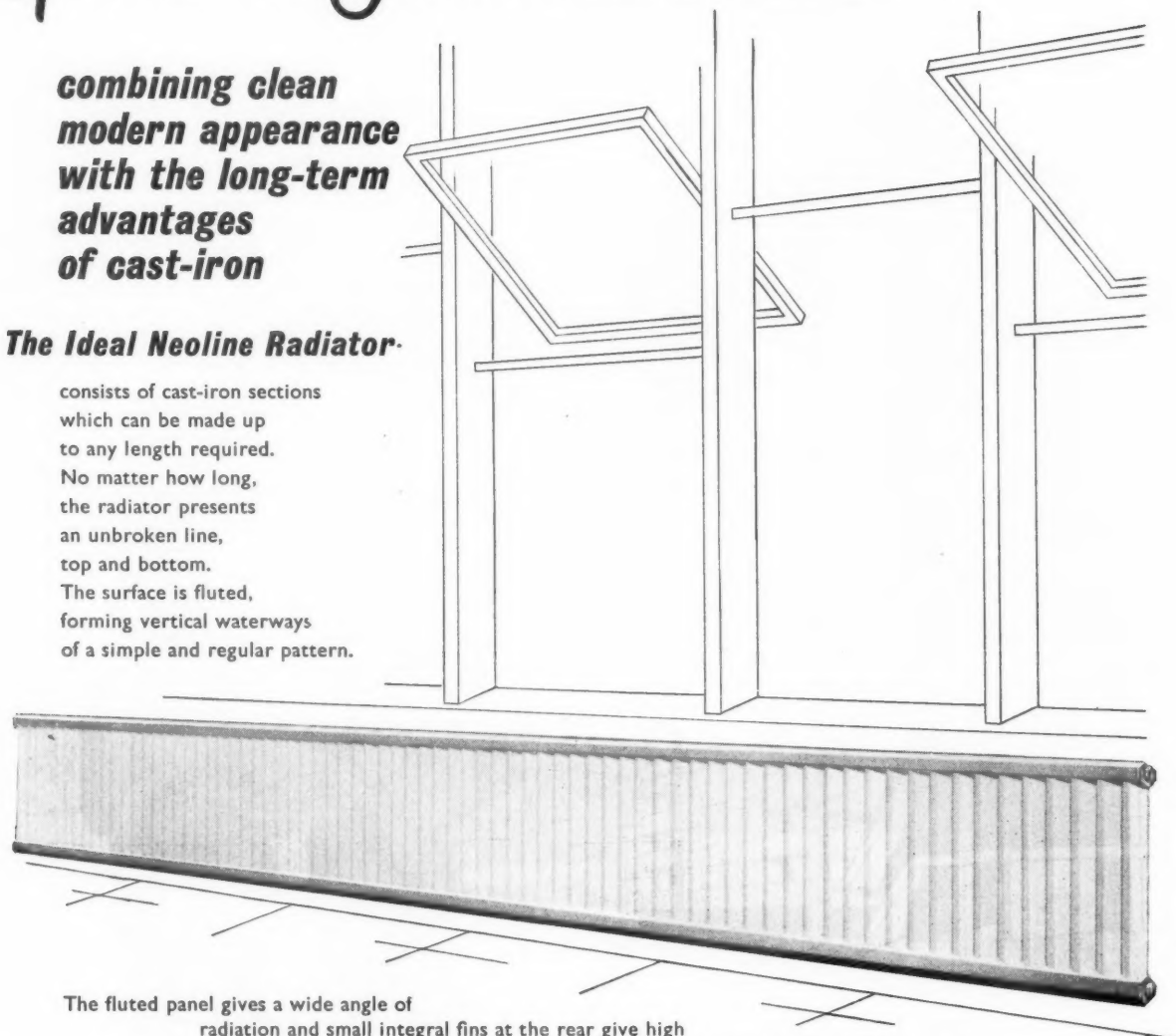

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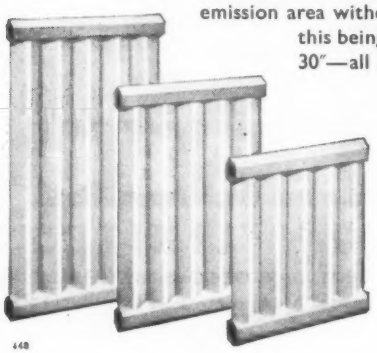

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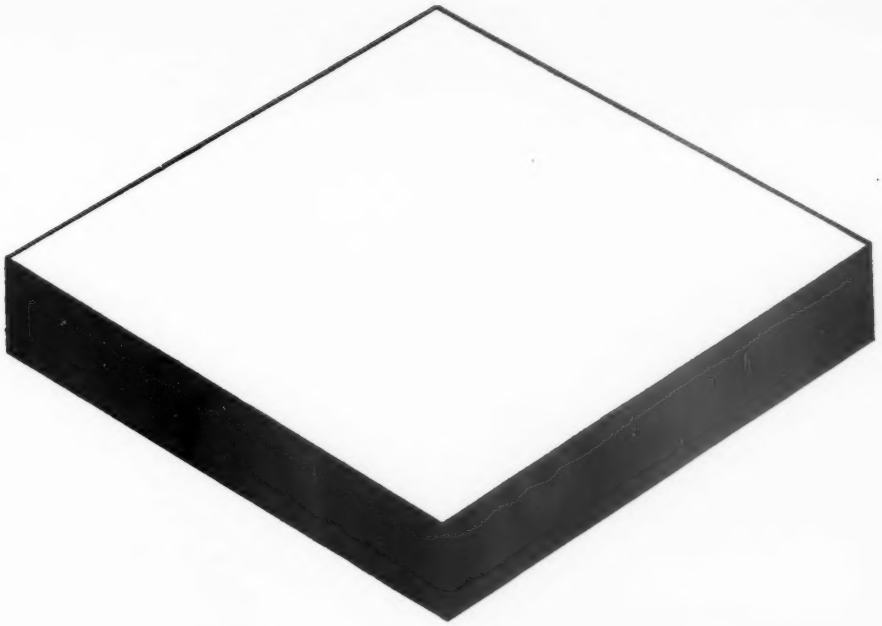

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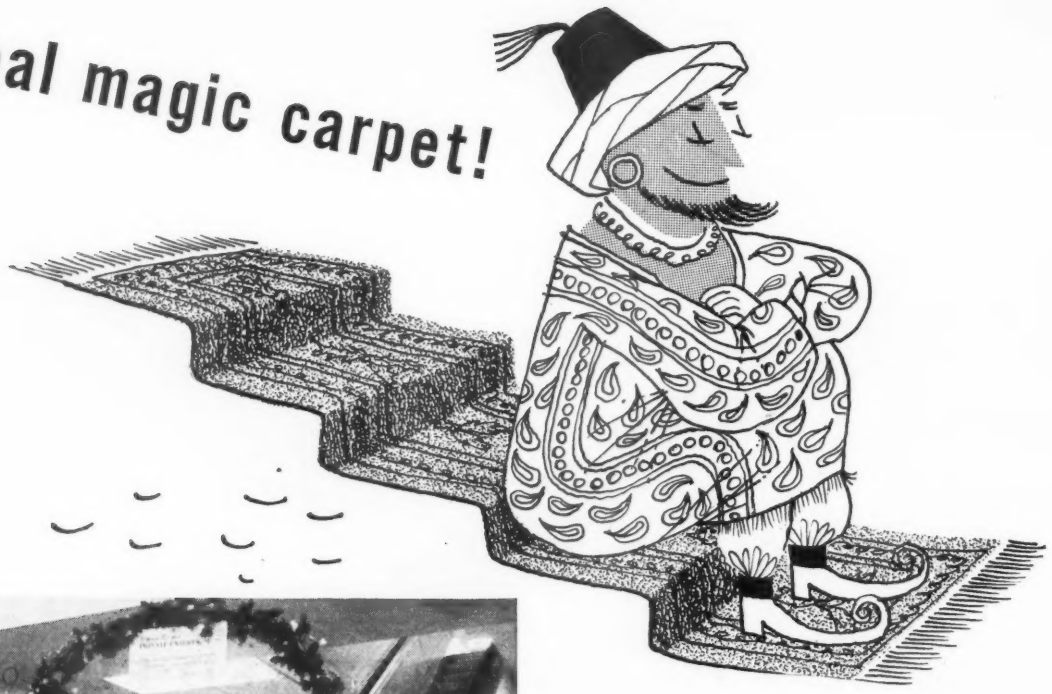

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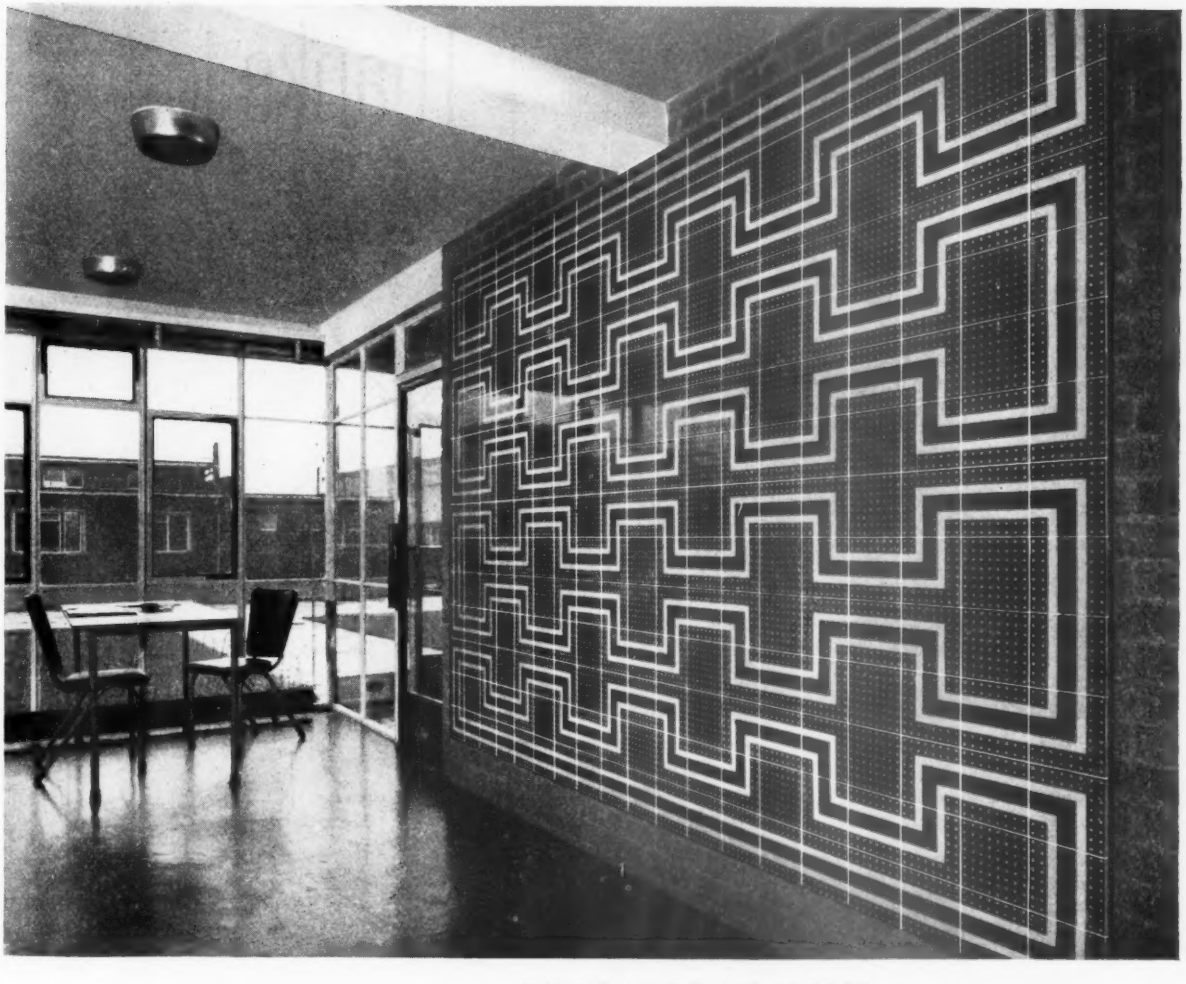

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during the [illegible] will also be successful [illegible] work.

Yours faithfully,
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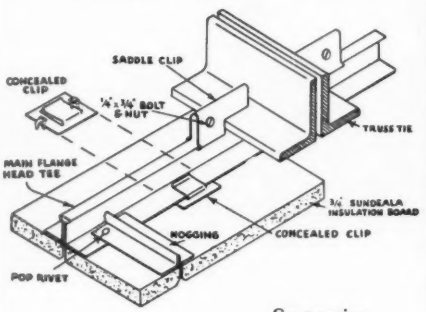

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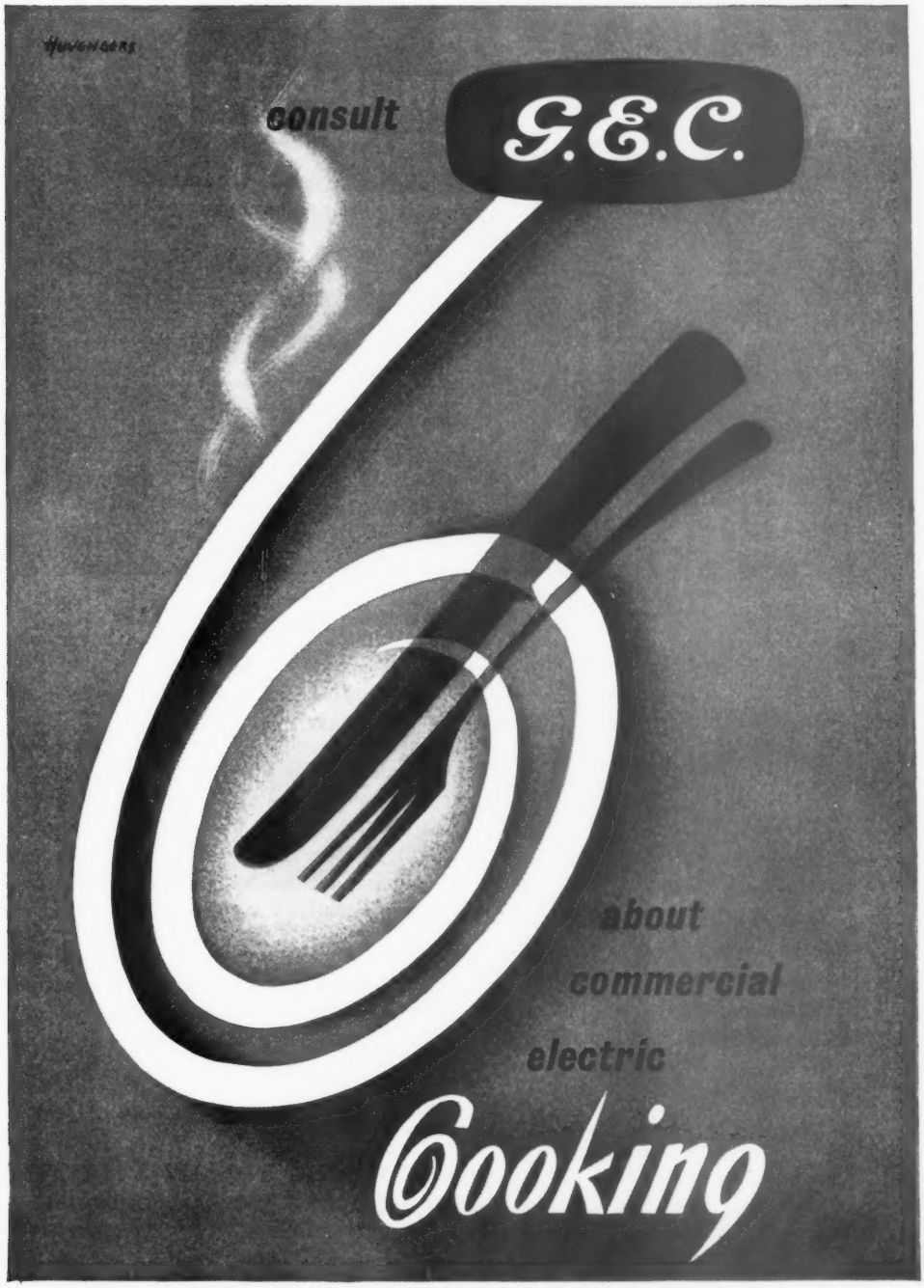

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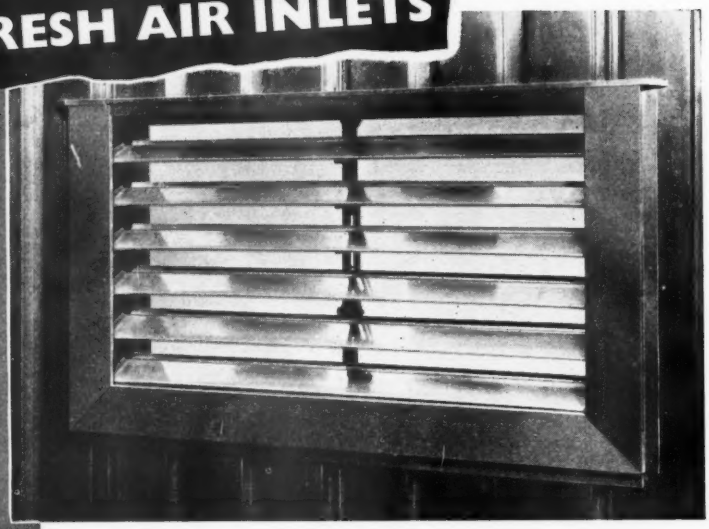

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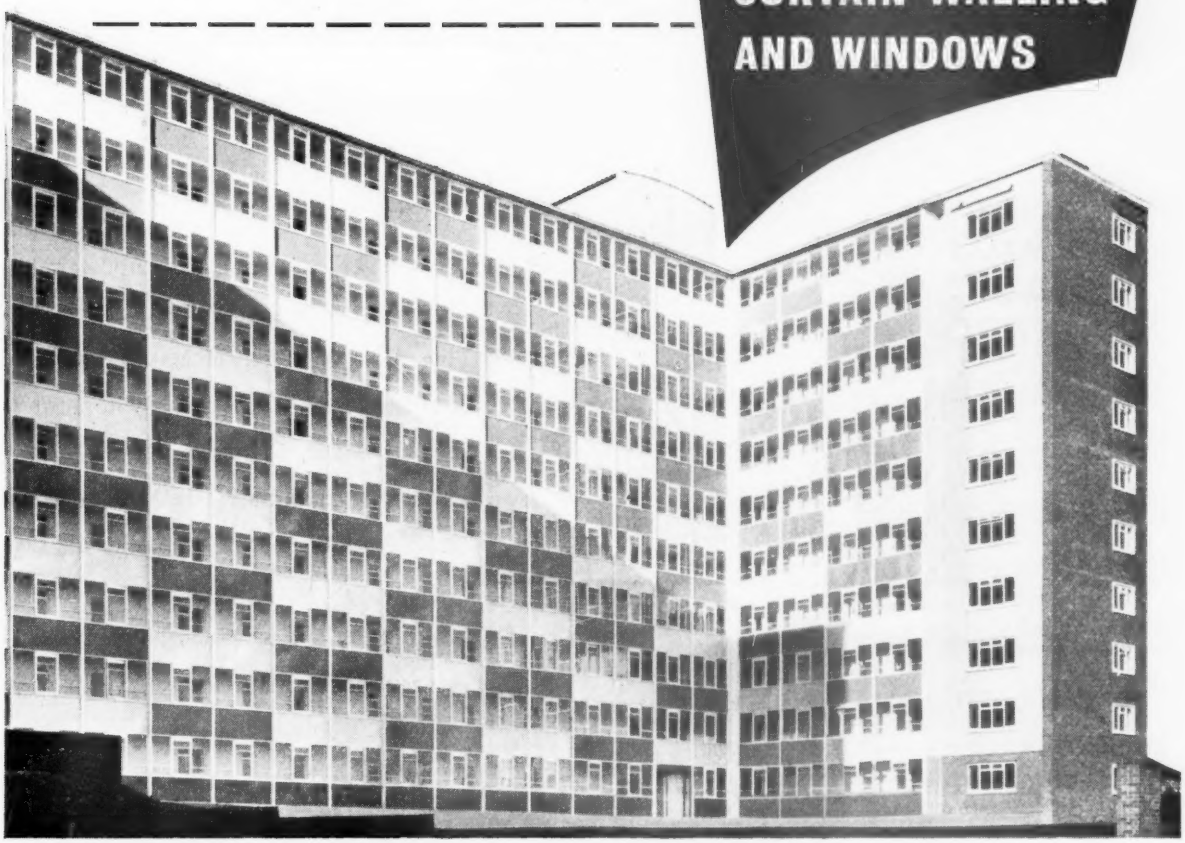

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When used as a sandwich in concrete sub-floors Synthaprufe acts as a horizontal damp course, effectively preventing moisture penetration.

Synthaprufe, a by-product of British coal, is obtainable in drums and cans.

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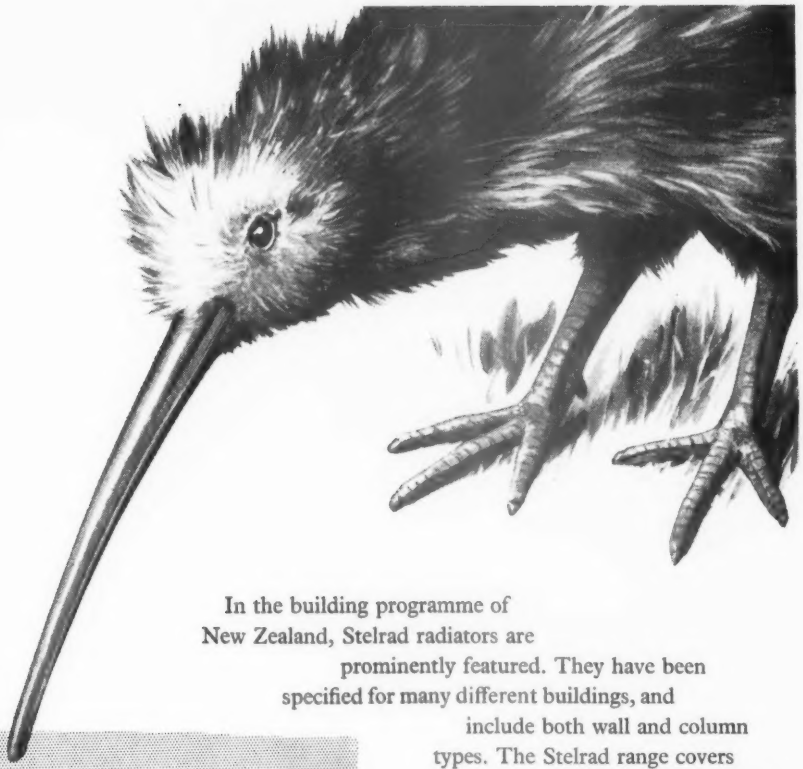
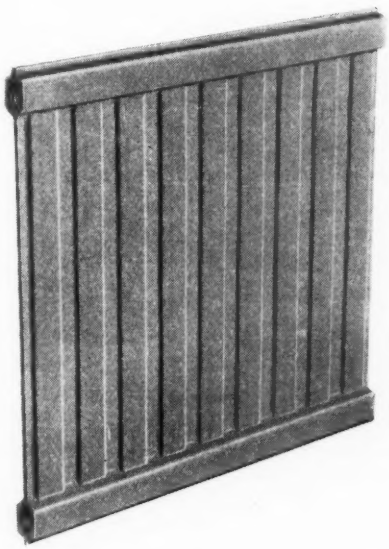


In the building programme of New Zealand, Stelrad radiators are prominently featured. They have been specified for many different buildings, and include both wall and column types. The Stelrad range covers every building need from angled wall radiators to column radiators curved for bay window fixing. The dimensions and heat emissions of each type and size are clearly set out in our catalogue to assist you in your calculations. May we send you the latest edition?



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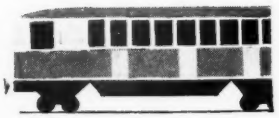

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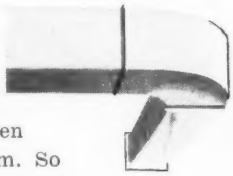
Galvatite is one of a range of coated and uncoated steel sheets made by John Summers. It is a galvanised sheet, and it is better than any other. There are four reasons for this. 1. *It has a uniform coating.* This even, uniform coating means Galvatite has no light or heavy spots. 2. *It defies white rust.* Galvatite protects from white rust during transport and reasonable storage. 3. *It is immediately paintable.* John Summers can recommend paints that can be applied to Galvatite right away. And 4. *Galvatite's amazing ductility.* The basic sheet is specially treated, then coated with molten zinc which contains a small amount of aluminium. So tight is the resultant coat that Galvatite can be pressed, formed and drawn as easily as its underlying steel sheet.



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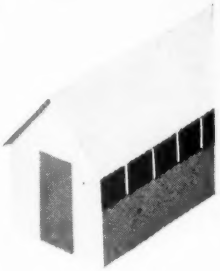
Manufactured in a continuous coil, Galvatite can be made into an endless variety of products ranging from cold formed sections, ships' ventilators, acoustic ceilings, coach and carriage roofs and floors, to coke hods, pig troughs, Dutch barns and silos as well as the usual corrugated roofing sheet.



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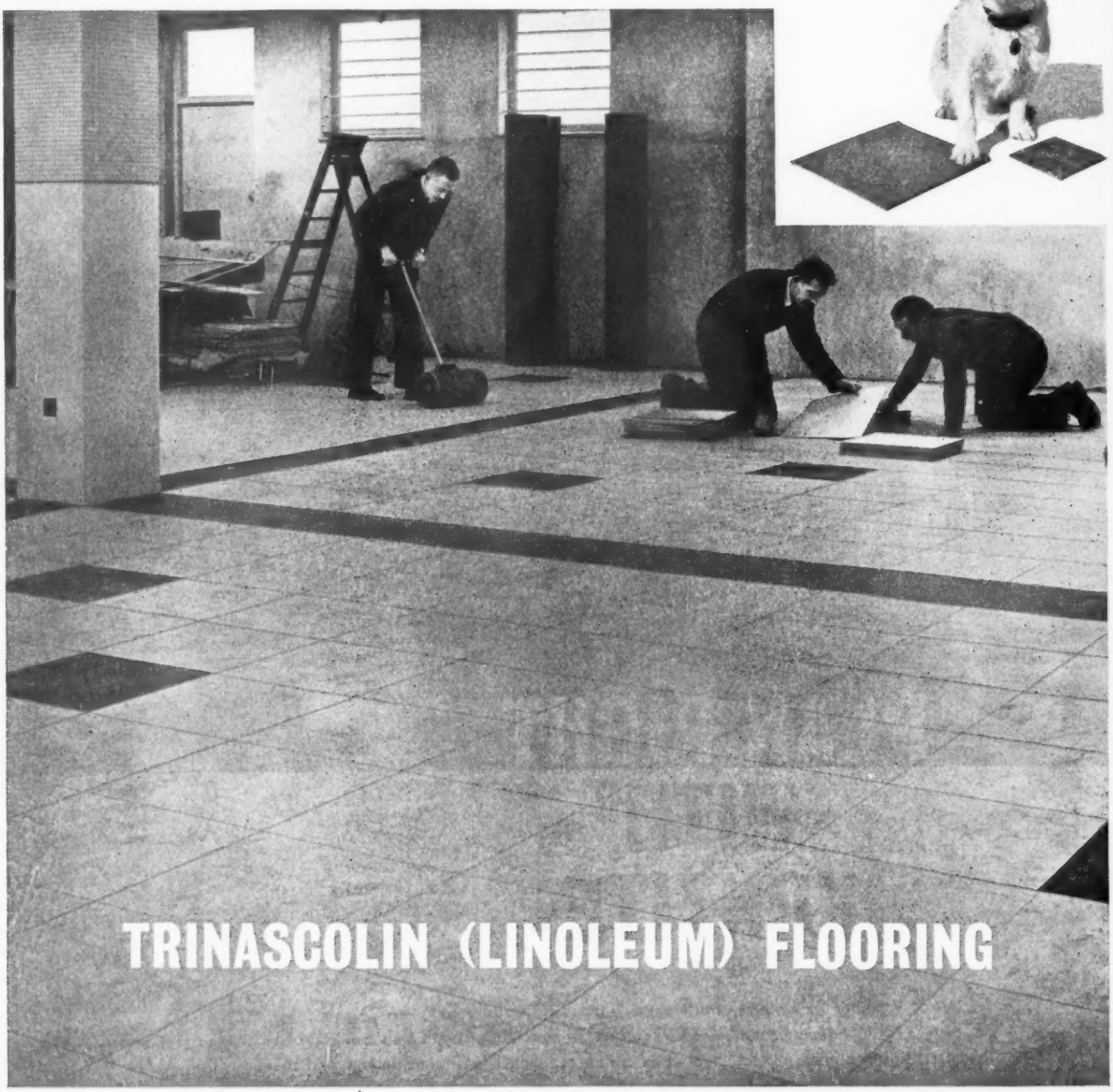

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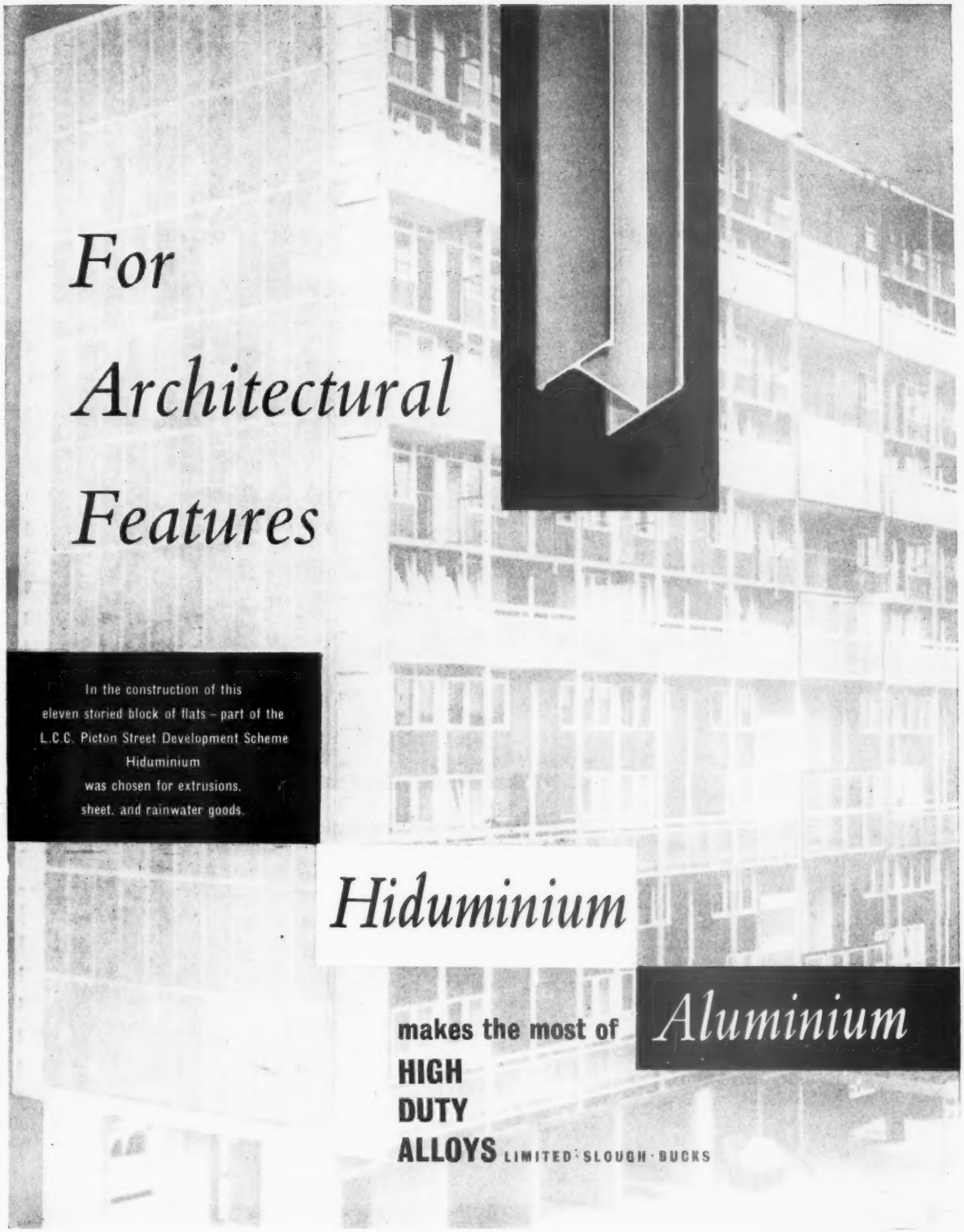
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We thank all those who wrote to us about the chess problem set in a recent advertisement.

In giving this suggested solution we acknowledge the assistance given us by chess expert, A. E. Mackett Beeson, Esq.

SOLUTION

white to move

1. K-R6. ..... B-K4;
2. K-Kt7. ..... B-R7;
3. P-B4. ..... PxP;
4. P-K5. ..... BxP;
5. PxP. ..... BxQ.Ch;
6. PxB. R-R1;
7. KxR. K-Q2;
8. K-Kt8. ..... K-K3;
9. K-Kt7. Winning the pawn.

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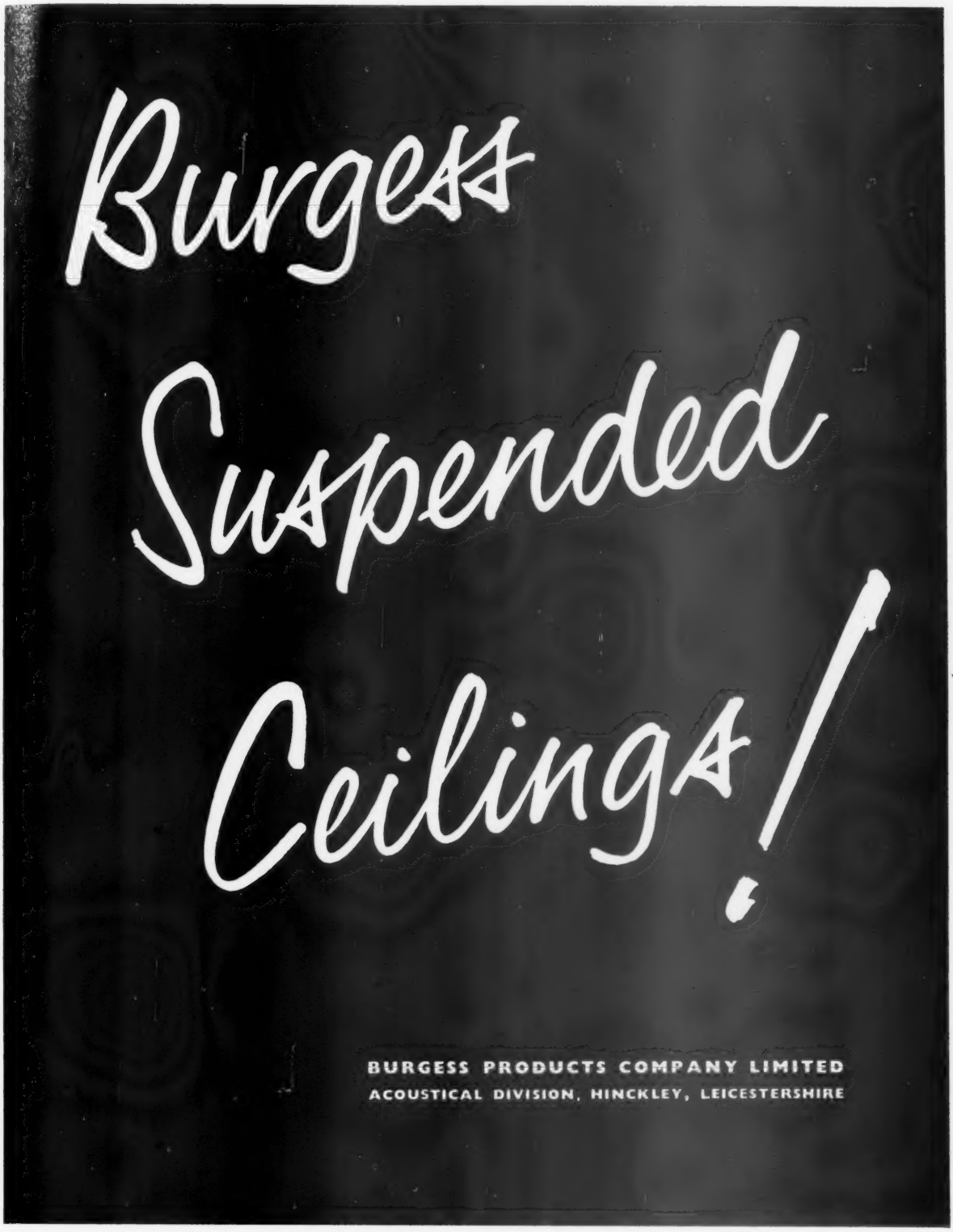
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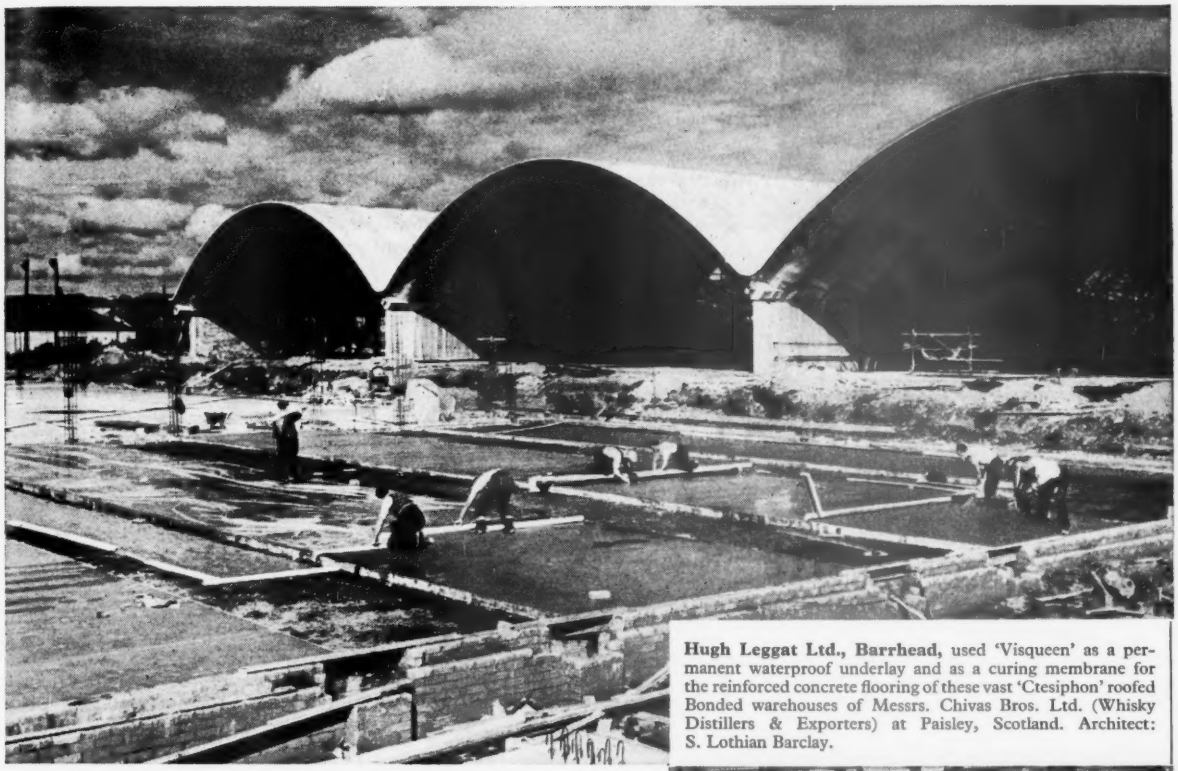

Hugh Leggat Ltd., Barrhead, used 'Visqueen' as a permanent waterproof underlay and as a curing membrane for the reinforced concrete flooring of these vast 'Ctesiphon' roofed Bonded warehouses of Messrs. Chivas Bros. Ltd. (Whisky Distillers & Exporters) at Paisley, Scotland. Architect: S. Lothian Barclay.

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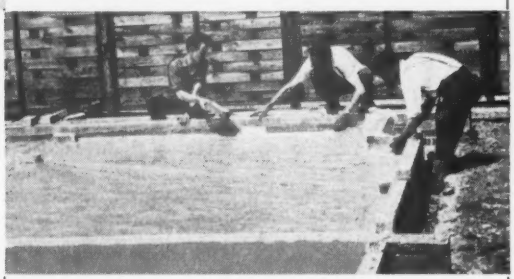
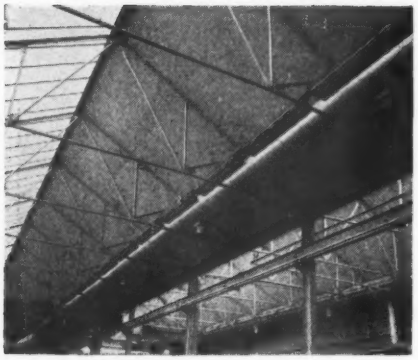


Unity Structures Ltd., London, laying 'Visqueen' 500 (heavy weight) as a damp-proof membrane between the hardcore and concrete flooring of these two semi-detached prototype houses built by them at Ruislip. The film was laid over the hardcore in 12 ft. widths in one continuous strip over the party walls, and incorporated into the cavity wall with the D.P.C.

John McLean & Sons Ltd. of Wolverhampton, use 'Visqueen' sheeting as a damp-proof membrane under the ground floor rafts of their "Beverley" houses in the Midlands. Architects: Diamond Hodgkinson & Partners. BV.127/3



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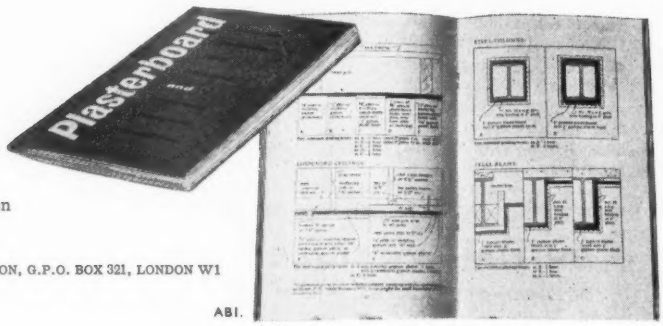

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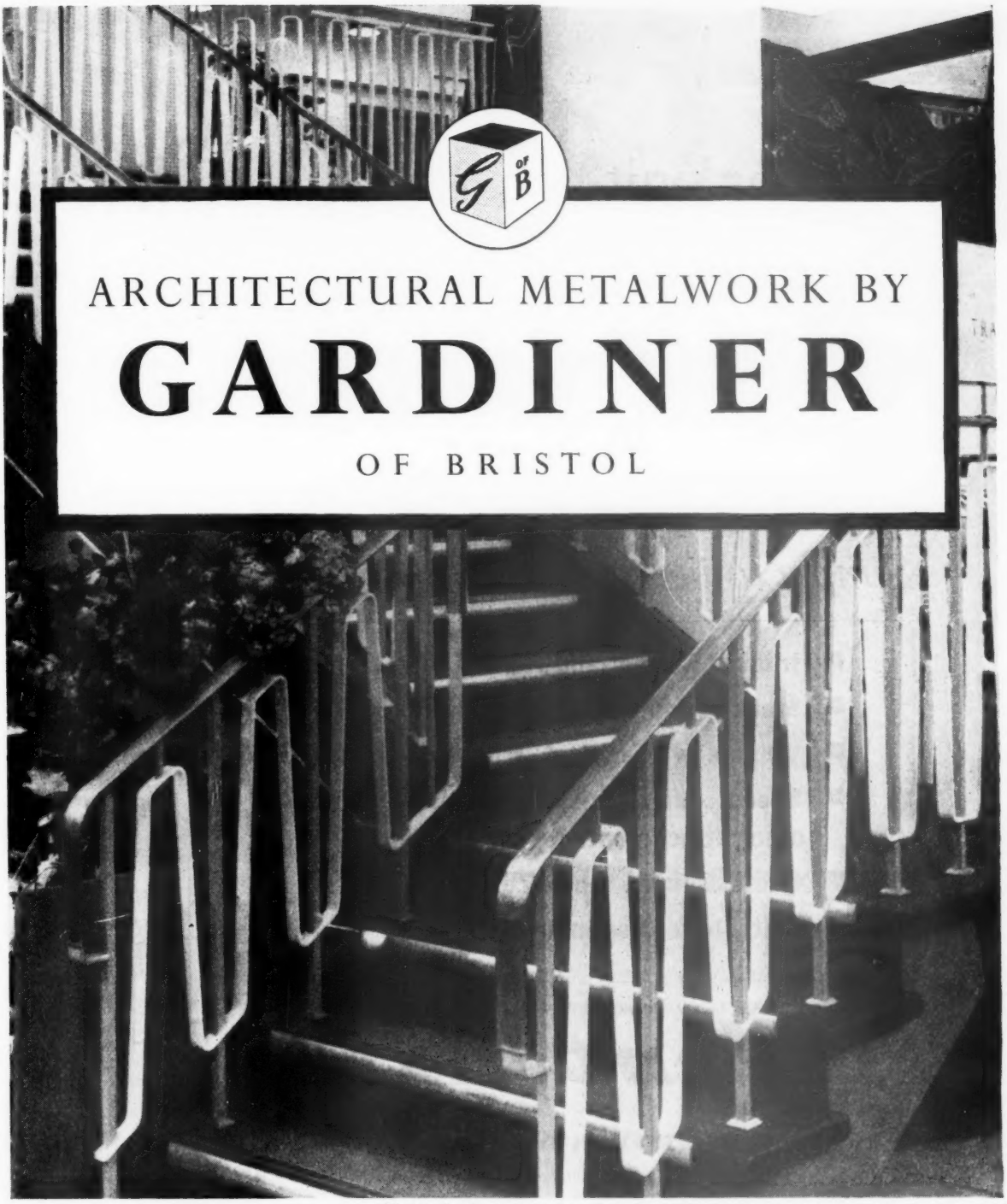

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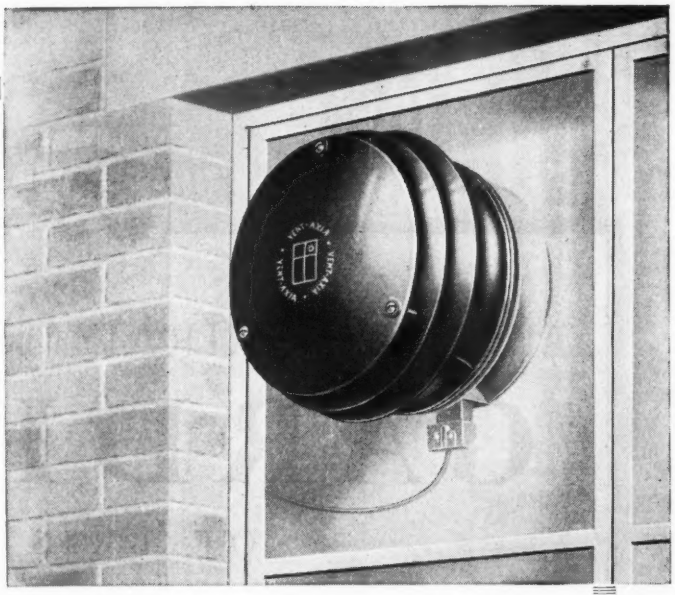

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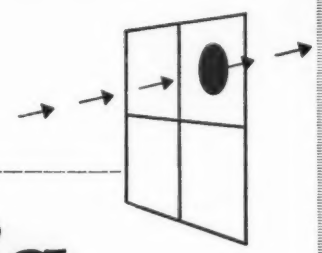

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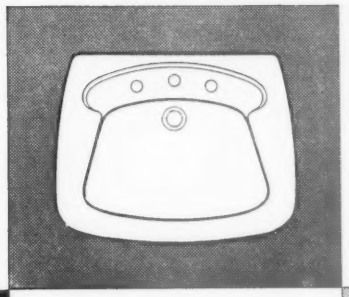

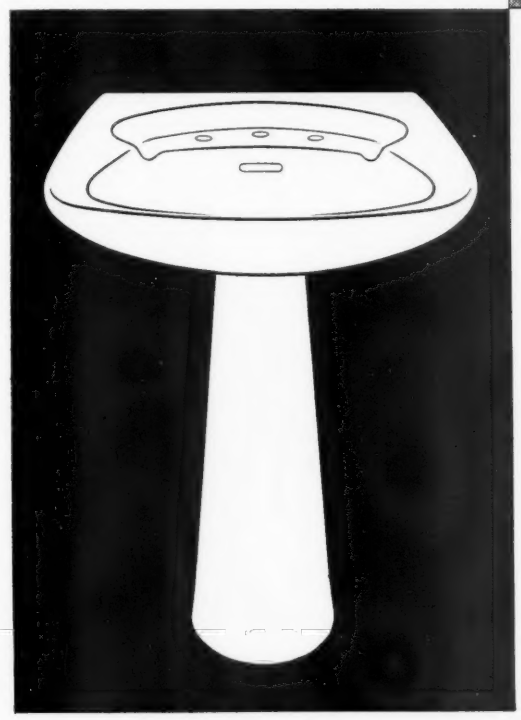

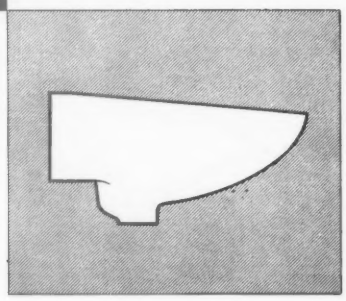

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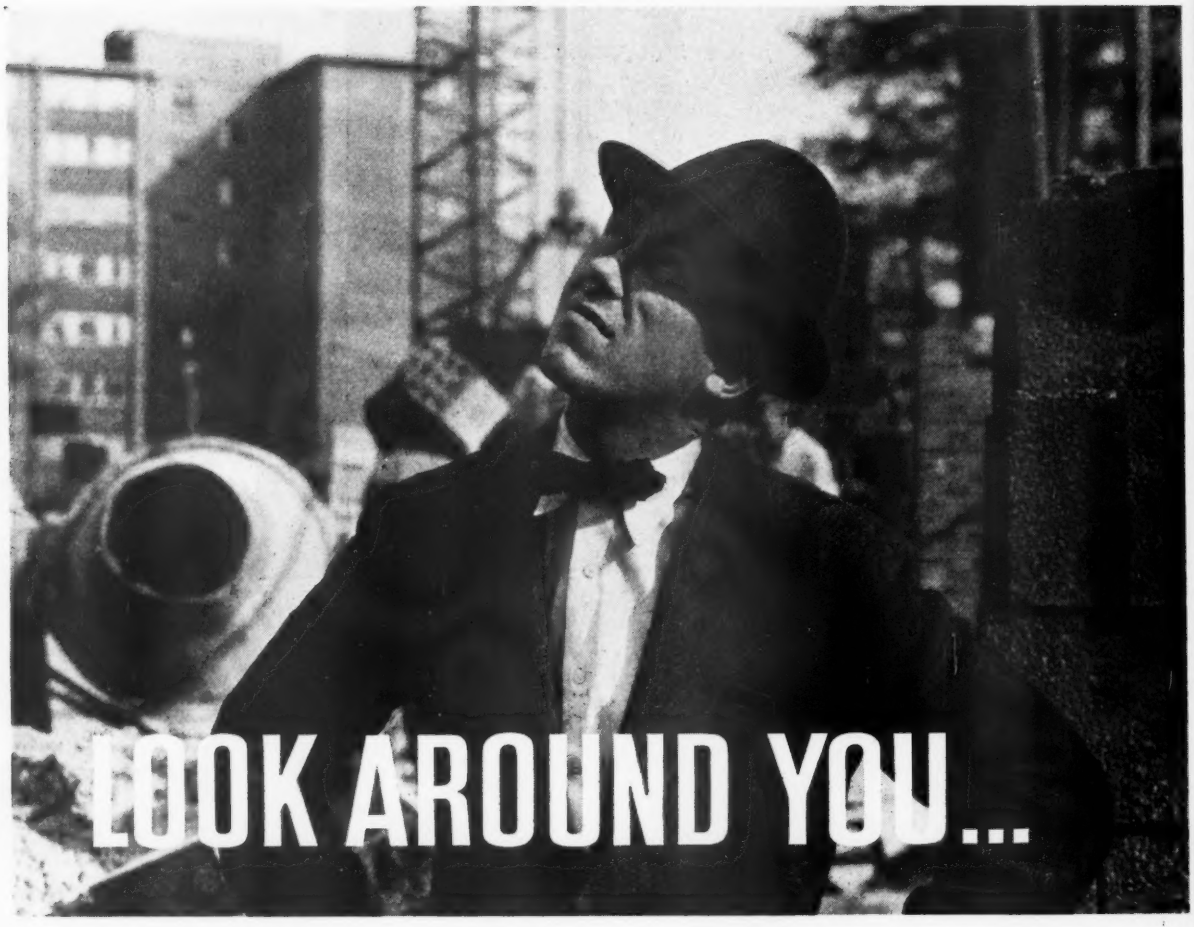

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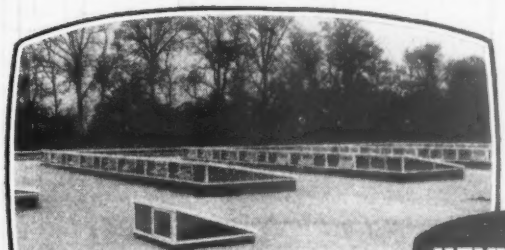

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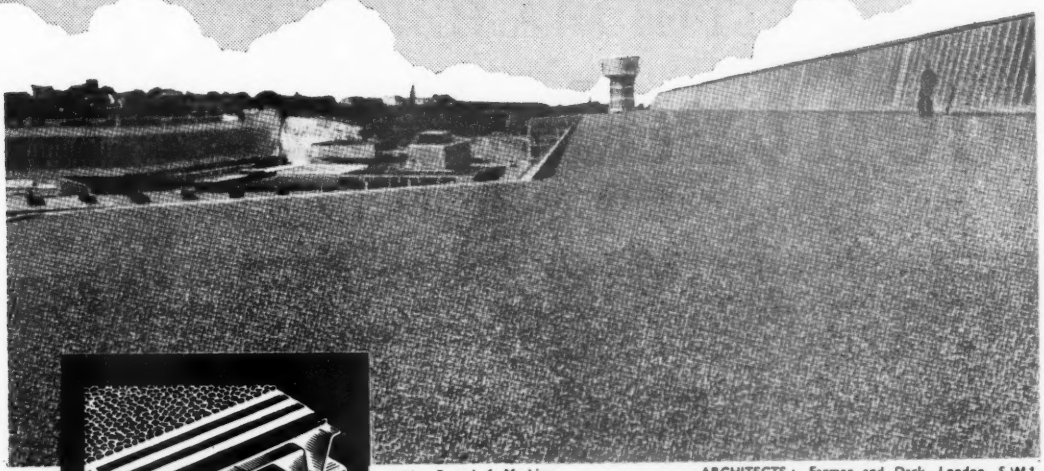

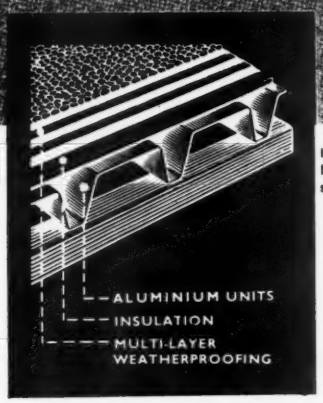

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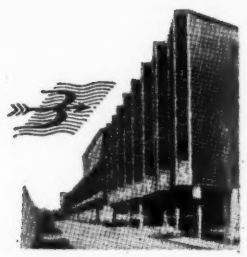

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EDITORIAL

Honorary Membership of the East Africa Institute for President, R.I.B.A. and Mr. Spragg

Mr. Basil Spence, O.B.E., T.D., A.R.A., A.R.S.A., President of the R.I.B.A. and Mr. C. D. Spragg, C.B.E., have accepted an invitation to become Honorary Members of the East Africa Institute of Architects following their recent tour to Africa.

R.I.B.A. Officers 1959–60

The Council at their meeting on 7 July appointed the following honorary officers for the Session 1959 to 1960.

Mr. Norman H. Fowler [*F*], as Chairman of the Allied Societies' Conference, automatically becomes a Vice-President for the Session under the provisions of Bye-law 28(1) (*b*) (i).

The Council reappointed Mr. A. G. Sheppard Fidler [*F*] a Vice-President and appointed Sir Hugh Casson [*F*] and Mr. D. E. E. Gibson [*F*] as Vice-Presidents in succession to the Hon. Lionel Brett [*F*] and Mr. J. H. Forshaw [*F*].

Mr. Richard H. Sheppard [*F*] was reappointed Honorary Secretary and Mr. Hubert Bennett [*F*] was appointed Honorary Treasurer in succession to Mr. Jefferiss Mathews [*F*].

With regard to the appointment of Honorary Treasurer, the Council expressed their appreciation of Mr. Jefferiss Mathews's services in that capacity over the past three years. During this period the Institute had faced a financial crisis, but, due to a large extent to Mr. Jefferiss Mathews's untiring efforts, the position had shown improvement and the Institute's finances were now on a sounder basis. It was recalled that the recommendation of the Constitutional Committee in regard to election to this office had been approved in principle by the Council, and it was agreed that the election for the Session should be made in the spirit of that recommendation. The Council expressed regret that by so acting Mr. Jefferiss Mathews would not be in office to take credit for the improved financial position which had come about.

In Brief

The Annual Conference was generally considered one of the most enjoyable and successful so far held. While we were at Cardiff, Cambridge University quietly bestowed an Honorary Degree of Doctor of Laws on Le Corbusier.

Bill Spragg has gone, after parties in his honour and presents from both the membership and the staff. Gordon Ricketts is now Secretary, and work is in progress on the redecoration of his room and on preparing the new visitors' waiting room.

The Midsummer Ball attracted 700 people and left the A.B.S. £500 in pocket.

A visiting party of Russian architects, twelve of them men and nine women, were received at the R.I.B.A. by the President and drank British beer and cider in a relaxed and jovial atmosphere.

The death of Sir Jacob Epstein [*Hon. A*] has removed a sculptor whose contributions to architecture have been controversial but tremendous.

The R.I.B.A. and IDEAL HOME magazine joint scheme for designs for Small Houses has been launched and was given time in the B.B.C.—T.V. "Panorama" programme.

The President making the presentation to Bill Spragg and his sister Mrs. Fidler on behalf of the membership.

The late H. S. Goodhart-Rendel

A requiem Mass for the late Harry Stuart Goodhart-Rendel, Past President, was celebrated on 18 July at St. Mary's, Cadogan Street, Chelsea. Bishop David Cashman was the celebrant, assisted by Bishop G. Craven, Canon W. Heffernan (also representing the Cardinal Archbishop of Westminster), the Abbot of Prinknash, Canon O. McManus (also representing the Bishop of Southwark), Mgr. F. Row, and the Prior of Downside.

Among those present were: Sir George and Lady Rendel, Miss R. Rendel, Captain Philip Dunne, Miss G. Dunne, Mr. Adrian Darby, Lady Paget, Mrs. William Wickham, Mrs. Theodore Hubbard, Iris Lady Wedgwood, the Marchioness of Crewe, the Countess of Halifax, the Countess of Onslow, the Dowager Lady Loch, Doreen Lady Brabourne, Lady Celia Milnes-Coates, Lady Cynthia Colville, Lady Phyllis Benton, Lady Mary Clayton, the Hon. Lady Packe, the Hon. Mrs. Woodruff, Sir Hubert Worthington [*F*], Sir Hugh Gurney, Sir Richard Nosworthy, Lady O'Malley, Sir Howard Robertson [*Past President*] and Mr. C. D. Spragg, Secretary, representing the R.I.B.A., Sir John Summerson [*A*], Curator, Sir John Soane's Museum, Dame Beryl Oliver, Mr. F. G. Broadbent [*F*] and Mr. H. L. Curtis [*F*], partners, and members of the staff, and Mrs. Broadbent, Mr. F. St. J. Gore, representing the National Trust, Miss B. M. Solly [*Hon. A*], Mr. E. D. Kinnish, representing the A.B.S., Mr. H. T. Cadbury-Brown [*F*], representing the Architectural Association, and Mr. R. H. Harrison representing the Ecclesiological Society.

Honour

Mr. Leonard C. Howitt [*F*], City Architect, Manchester, has been awarded an Honorary Diploma of Associateship by the Regional College of Art, Manchester.

The Town Planning Institute

Her Majesty the Queen has approved the grant of a royal charter to the Town Planning Institute.

Mr. J. S. Allen [*F*], Professor of Town Planning in the University of Durham has been elected President of the T.P.I. for 1959–60. He takes up office in succession to Mr. U. Aylmer Coates, in November.

The Chair of Architecture, London University

Mr. R. Llewelyn Davies [*F*], at present Director of the Nuffield Foundation's Division for Architectural Studies, has been appointed Professor of Architecture at London University. He will take up his post at University College in October 1960, in succession to Professor Hector Corfiato, F.S.A., S.A.D.G. [*F*], who has occupied the Chair since 1946.

New Chairman of R.S.A. Council

Mr. Oswald P. Milne [*F*] has been elected Chairman of the Council of the Royal Society of Arts for the coming year, in succession to Sir Alfred Bossom, Bt., M.P. [*F*]. He has been a Fellow of the Society since 1907.

Rome Scholarship in Architecture 1959

The Faculty of Architecture of the British School at Rome announce the award of the Rome Scholarship for 1959 to Mr. John Alan Whewell, Dip.Arch.(Manchester).

Mr. Whewell, who is 28 years of age, is at present a post-graduate student in the School of Town and Country Planning at the University of Manchester.

Exhibition of Swiss Industrial Architecture

As part of the Swiss Fortnight in London—'Switzerland on Show'—the R.I.B.A. will present an Exhibition of Industrial Architecture in Switzerland from 6 to 17 October (Monday–Friday 10–7; Saturdays 10–5, admission free). The exhibition, which will be opened by the Swiss Ambassador, has been prepared by the Federation of Swiss Architects and will contain photographs, plans, models and it is hoped sculpture. After the showing at the R.I.B.A. the Swiss Embassy are hoping to tour the exhibition to about six centres in different parts of the country.

Switzerland is one of the most highly industrialised countries in the world. Economic factors have favoured the decentralisation of factories and Switzerland has therefore been spared the ugly industrial centres which are a common feature in many other countries. From early days the Swiss sited and planned their factories so as to provide pleasant places in which to work. The exhibition will show the developments in design and layout which have been achieved by Swiss architects with the co-operation of factory owners since the days when these projects were first developed.

Communications in the Building Industry

In November 1957, a Management Appreciation Conference was held at Sundridge Park Management Centre, consisting of 24 members of the three main organisations which make up the building team—architects, quantity surveyors and builders; eight representatives attending from each of the three sections. So successful was this conference that it was jointly decided that the 24 members should re-assemble in 1958 to carry their deliberations a stage further, in the hope that detailed consideration of certain specific problems might prove of value to the future conduct of building operations as a whole.

The subject chosen was that of communications within the building industry, and the joint findings of those who took part have now been published in a report 'Communications in the Building Industry', which is obtainable from the Secretary, R.I.B.A., price 2*s.* 6*d.*, postage 4*d.*

'Your Factory—Why You Should Use an Architect'

The Public Relations Committee have just issued an attractively produced leaflet under the above title. It states specifically the advantages which accrue from employing an architect for this kind of work as opposed to other forms of service which some industrialists employ. The leaflet also gives a brief account of the architect's relationship with his client.

Copies of the leaflet are available free of charge from the Secretary, R.I.B.A., 66 Portland Place, London, W.1.

Designs for Small Houses

The entries in the competition organised by the R.I.B.A. and IDEAL HOME magazine for designs for Small Houses will be on show at the Building Centre, Store Street, London, W.C.1., from 2 until 26 September (Monday–Friday 9.30–5; Saturday 9.30–1).

A book containing illustrations and plans of the 30 winning designs, ranging in price from £2,000 to £4,500, together with useful information and advice will be on sale during the exhibition or can be obtained direct from the Publishing Department of IDEAL HOME magazine, 57, Long Acre, W.C.2. The book costs 15*s.* post free: cheques and postal orders should be made payable to Odhams Press, Ltd.

Commissions in the Army Engineer Regiment (T.A.)

The Regiment has squadrons in the East End of London. Members within reach of that area who wish to be considered for commissions are invited to write to Lt.-Col. W. W. Chapman, O.B.E., T.D., R.E.(T), Commanding 114 Army Engineer Regiment (T.A.), Hillman Street, Hackney, giving a brief account of themselves.

Lt.-Col. Chapman is himself an Associate of the Royal Institute.

Exhibition of Chinese Architecture

This important exhibition was prepared by the Architectural Society of China and arrived at the R.I.B.A. after four years' negotiation by Mr. Andrew Boyd [*A*]. It was opened on 8 July by Mr. Huan Hsiang, Chargé d'Affaires of the Peoples Republic of China in the presence of the President, R.I.B.A. Mr. Huan Hsiang said in his speech:

'I hope this exhibition may help to further the mutual understanding between the Chinese and British people.

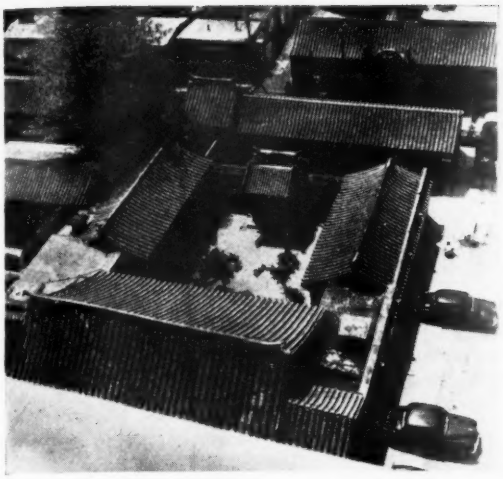
'The photographs shown in this exhibition can be roughly divided into two categories. The first includes pictures showing Chinese architecture, including about 150 on ancient architecture and 100 on modern architecture. The second category shows town-planning in China. There are about a dozen of them.

'You will be able to see from the photographs in this exhibition that Chinese architecture has a very long tradition and unique style. As early as more than 3,000 years ago, some characteristics of Chinese architecture were already formed. In the long period since then, it has been continuously developed and improved by the Chinese people and architects. It has also accepted and assimilated some beneficial foreign influence in that process.

'The ancient Chinese architecture is a rich cultural heritage of the Chinese people. It has reached very high standards in the art of architecture and building technique. The Chinese people are proud of this heritage. In the last ten years, the Chinese Government and people have done their best to preserve and repair all the old building of value and have made not a few new discoveries of such buildings. Research work in the traditions of ancient Chinese architecture is also proceeding on a scale greater than ever before.

'In these ten years, architectural work and town-planning have had an unprecedented development. New cities, new factories, schools and various kinds of buildings for civil use have sprung up in hundreds of thousands. From 1949 to 1958, China completed 350 million square metres of building work.

'At present, our principles for architectural work are that it must be practical, economical and beautiful. For example, the big roof such as those of the ancient palaces is one of the features of traditional Chinese architecture. But it is not of great practical value and also quite costly, so we are not using it now as widely as before. Our policy is that buildings should be adapted to the geographical conditions and use building materials produced locally as much as possible. It should be inexpensive and at the same time beautiful.



conducted in accordance with the need of the developing national economy and in a planned way. Residential buildings and public welfare facilities are arranged in such a way so that they can be both practical and beautiful. Tree-planting in the cities is done on a large scale and has now become a national effort. The idea of garden cities is beginning to be put into practice.

'We hope that, by developing the traditional architectural art of China and at the same time learning from the useful experiences of foreign countries, a modern, new Chinese architecture which meets both the material and spiritual needs of modern Chinese people may be created. We can see from this Exhibition that architects of new China are working for this aim and have won certain achievements. I believe they will fully succeed in their efforts in future because new things always develop and perfect themselves.'

A typical small courtyard house in Peking. The courtyard house was well adapted to the needs of the Chinese family, in which sometimes several generations would live together. Different family units inhabited different parts of the courtyard, and a larger house would consist of several or many such courtyards.

Above: The Great Stone Bridge, Zhaoxian, Hopei, A.D. 605–615, Engineer Li Chun. This magnificent bridge has a span of 123 ft. with a span-to-rise ratio of 1 : 5·23. There are quite a number of single-span, flat segmental arch bridges with open spandrels in this and other parts of China, but this one is the earliest, the widest and the grandest. *Right:* A modern example: two-storey dwellings on a housing estate at Caoyang Xincun, Shanghai.

Since 1949, the standard of architecture in China has been greatly raised. . . .

'Town-planning has also been greatly developed in these ten years. . . . Most of the old cities have been fundamentally rebuilt. Slums which were a permanent feature of the old cities have disappeared. Many new residential areas and welfare facilities have been built making it possible for the working people to have good working and living conditions. Construction of new cities is

Architects in Industry Group Announcement

In July of last year, at the invitation of the Ad Hoc Committee on the Representation of Members in Salaried Employment and Review of the Structure of the Profession, a number of architects employed full-time in industrial companies met at the R.I.B.A. under the chairmanship of Mr. Stuart Bentley [*F*] and established themselves as a group with the following objects:

(*a*) To provide the R.I.B.A. with useful data on a representative range of companies, as to the size of architectural staff, volume and type of work handled, relationship with engineers, access to the board of directors, and similar issues.

(*b*) To exchange information so as to determine whether there were any common problems peculiar to architects in the manufacturing industry, and if so, whether some joint action might be desirable, the ultimate and primary aim being to improve the quality and advance the cause of architecture in the industrial field.

The group has since held several meetings to pursue the second objective, and is convinced that, having specialist experience in industrial undertakings of great diversity, and spending immense sums annually upon building, they have a unique contribution to make to the profession. They therefore intend to establish themselves upon a permanent basis, and the R.I.B.A. Council, subscribing to the principle of self-supporting voluntary groups of members who feel a sense of common interest, meeting under the auspices of the R.I.B.A., have agreed to make available to the group the same facilities for meetings at the R.I.B.A. as are already accorded to similar specialist groups.

Architects employed by manufacturing firms, who are interested in joining this group, are invited to get in touch initially with Mr. Stuart Bentley at the Dunlop Rubber Co. Limited, Fort Dunlop, Erdington, Birmingham 24.

Design of Garages

The Council of the R.I.B.A. are approaching the Minister of Housing and Local Government to see whether he will consider removing private garages from the list of buildings exempted from planning control.

At the moment, under the provisions of the Town and Country Planning General Development Order 1950, there is no control over building within the curtilage of a dwellinghouse, provided such building does not project beyond the front of the dwelling.

In support of the proposal the R.I.B.A. has drawn attention to the following points:—

(1) The effect of exemption has often been visually disastrous. Inappropriate materials, poor siting and bad design are the most frequent results.

(2) Frequently property in the vicinity of such buildings depreciates in value because of their design.

(3) Local authorities have power to act in certain cases, but are all too often afraid to act because they are not legally sure of their ground.

Cover Picture

The Guggenheim Museum is due to open in October. It is chosen this month to coincide with the brilliant and scholarly portrait of Frank Lloyd Wright which Professor Henry-Russell Hitchcock wrote for the JOURNAL when he was over here in June. He relates that on one occasion Philip Johnson, stung to a retort by F. L. W., called him 'the greatest architect of the 19th century', but it is interesting that Sir John Summerson writing in the NEW STATESMAN thinks that '. . . as Wright recedes into history he will probably be thought of as a belated but outstanding 19th-century figure who planted some surprising rockets in the middle of the 20th. The Mile-high Illinois project (1956) is perhaps the most surprising of all. But what a very 19th-century thing to want to do!'

The President greeting Sir Winston Churchill when he came to the R.I.B.A. on 21 July to attend a meeting of Trustees of the Churchill College Trust Fund.

An exhibition of the Churchill College Competition designs was on view at the R.I.B.A. 13 August to 12 September

Frank Lloyd Wright 1869–1959

by Henry-Russell Hitchcock [*M.A., H.C.M., U.S.A.*]

IN THE LONG international roll of honour the list of Royal Gold Medallists of the Institute provides, running from C. R. Cockerell in 1848 to Mies van der Rohe in 1959, most of the great architectural names of the last hundred years appear—not to speak of quite a few that are, or will be, forgotten. Among them none, probably, had higher aspirations to glory than Frank Lloyd Wright, for Wright set out to be the 'world's greatest architect'. If he will hardly be conceded that ultimate title even by warm admirers, yet there is little question that he *was* America's greatest architect and, indeed, possibly America's greatest son of the 20th century. In the way that Abraham Lincoln came long ago to be accepted as a very great American even by most Southerners, and Franklin Roosevelt by many of his opponents (not including Wright, however!), so Wright since his death last spring has received tributes from those who always opposed him and all that he stood for.

To the end Wright remained actively productive; indeed, he probably never had so much work on his drafting boards as at the time of his death. Thus the record will not be concluded with the Guggenheim Museum, scheduled to open in New York in October, but in the next few years should receive a very considerable increment of other buildings executed under the supervision of the Taliesin Fellowship from drawings left complete by Wright. When we recall that his first personal work of architecture, his own early house at Oak Park, was built 70 years ago in 1889, we must realise that his productive career has already been comparable in length, not to the ordinary architect's 15 or 20 years of mature production, but to an historic period. In fact it ran parallel with the whole period which, for want of a better name, we still call 'modern'.

Yet his work was never readily classifiable with the successive phases of modern architecture that extend from the Arts and Crafts and the Art Nouveau of the 1890's to the Miesian and Neo-Corbusian of the 1950's. Where other modern architects, particularly from the early 1920's onwards, converged their aspirations and created more or less consciously in concert, an architecture that was intended to be at once universal and anonymous, Wright (despite all that he provided specifically and by the inspiration of his example towards the crystallisation of modern architecture internationally) began and remained an arrogant individualist. He had little or no respect for his contemporaries or his juniors in general; he even scorned most of the work of those whom he himself had trained.

Never perhaps was Wright more outside the main current of contemporary architectural development than in the busy years since the last war. Despite his apprenticeship to Sullivan, the one architect to whom he was willing to acknowledge a debt, he was never interested in 'cage' construction: the Miesian 'curtain-wall', even though he had foreshadowed it in his National Life Insurance project of 1925, was as unsympathetic to him as the Corbusian 'boxes-on-stilts' of the 1920's. During the years since 1956, while his Guggenheim Museum and the Seagram Building of Mies van der Rohe and Philip Johnson were rising together in New York, one could wonder, however, if it might not be somehow prophetic that the skyscraper, not Wright's sculptural swansong, was finished first. Philip Johnson has said of the Seagram Building: 'We won't be doing that again' (although very evidently a lot of other people, not only in America, still are!).

From first to last Wright never quite belonged with the successive generations of his contemporaries. Whether or not there are implications for our future in his late works and projects, as there so evidently were in his buildings of the opening decade of the century for the modern architecture of later years, he has always belonged to the ages, with Bernini, say, or (as he would probably prefer to have us put it) with Michelangelo. Despite the quite definite contributions that Wright made to the general development of a new architecture in our century, his major works are best appreciated, like the great monuments of the further past, outside their immediate historic context and for the innate vitality of formal invention they so consistently display. For all Wright's interest in new materials and new methods of building—going back at least to his cast-concrete bank project of 1901 and culminating in the Mile-High skyscraper project that would require nuclear power to run its lifts—technical matters have always been for Wright means, not ends.

Wright's Unitarian God was not Science but Nature; and Nature for him, was the nature of 19th-century botanists not that of 20th-century physicists. The analogies of his 'organic architecture' with the scientific realities of nature were doubtless far-fetched; but since they were always poetic, not pseudo-rational, they were never silly like the analogies with misunderstood concepts of 'Space-Time' others proposed for application to architecture in his later lifetime. But, above all, Wright was a three-dimensional artist with an almost incredible—and certainly inexhaustible—power of invention.

Whole periods of architecture in the past—Classical Greece, for example, or Romanesque Europe—have had as their aesthetic capital only a relatively few formal inventions, however infinitely those were refined or regionally varied. But the Wright who made his reputation with the Prairie House at the opening of this century was as much, or more, inspired later by mountains and by deserts as by the flat Middle Western terrain of his early manhood; indeed, he spent much more of his life among the wooded hills of Wisconsin and the barren sweeps of Arizona than on the Illinois prairie. The Arizona desert, he once told me, was for him no less than 'a conversion'; and from each different natural setting in which he worked he was inspired to a radically different formal invention—only the man-made landscape of the megalopolis failed to move him.

Wright gave great importance also to the expression of another sort of 'nature', the nature of materials, but I doubt that it ever really came first in his designing. He once told me, when we were discussing how unfortunate was the wire-screening with which later owners enclosed the verandahs of his early houses, that he would like to design a house primarily in terms of wire-screening. But I am sure that before he did so he would need to have been confronted with a particular site in an insect-ridden jungle—and also to have conceived abstractly an aesthetic unit of transparent space—before the material could have been employed as the solo instrument of a Wrightian concerto.

Wright gave much thought to the way that his buildings were to be used, but he was never a 'functionalist'. His clients have always had—and often with difficulty—to learn how to live in his houses; yet eventually the whole modern world has come to use—and even to like—some of his most drastic innovations in domestic planning. Most museum directors certainly do not like the thought of having to use such a museum as he has lately built in New York; and only very liberal clergymen are ever likely to approve the negative ecclesiology of his churches.

It need not be Freudian to recall the great influence in Wright's childhood years—one of which he made much in his autobiography, and Grant Manson even more in his book on the early work—of the Froebel kindergarten 'gifts'. The cube, the sphere, the cylinder, the solid triangular forms of those educational playthings have always been at the core of his invention. From these simple geometrical elements, like a musician working up and out from a two-note theme, Wright elaborated the complex visual symphonies of his architecture. If, to the taste of a later generation, he sometimes seemed unwilling to content himself with the macrocosmic expression, at fully architectural scale, of these units of design and extended them *ad nauseam* into the furniture and the decoration, he never neglected the whole for the parts.

The purposes of particular structures as he envisaged them—often rather differently than anyone less assured of their own omniscience would have done!—provided

the frame of each composition. They determined, so to say, whether it would be a sonata or an oratorio. The chosen materials —often local, as in Arizona, and never exploited before—provided the orchestration. But the design concepts, for all their infinite variety, can always be referred back to a basic geometrical theme, often visible on the plans as a grid of lines and providing the actual module for the execution.

I have used a musical analogy rather than a literary or pictorial one because Wright was most profoundly devoted to music—especially to that of Beethoven, but also to the more architectonic music of Bach. He almost always had 'court musicians' to perform for him, pianists and string players of the highest attainment, and as he moved about the two Taliesins he used often to stop and improvise on the various Bechsteins, Steinways, and harpsichords with which his princely quarters were stocked.

On this side of the Atlantic there is one final point to be made. Wright thought of himself as the perfect American, or, to use his own term, Usonian. But in reality there is no such thing; if he himself preferred Whitman to James, that was only to limit the concept of what an American *ought* to be. In fact Wright was above all a Celt, and a very typical one. His father came from New England, and although Wright owed his musical upbringing to him, the father passed out of the family's life early and was largely forgotten or ignored. To hear Wright talk one might almost have assumed that he was the product of parthenogenesis on the part of his Welsh-born mother, Anna Lloyd Jones. In an article by A. L. Rowse in the April HERITAGE there is a description of John Dee, an Elizabethan Welshman, that could be applied almost without emendation to Wright: '. . . the touchiness and suspicion, the acuteness and imagination, the originality along with a certain haphazardousness, the tendency to go over the borderline. . . .'

The negative aspects of Wright, the vanity, the histrionic posings, the almost paranoid chips-on-the-shoulder, the obstinacy, the plain bad manners, personal and architectural, will be forgotten, except as they give colour to an extraordinary personality. But the positive qualities of individuality in architecture have hardly survived him, except perhaps in that polar figure of 20th-century architecture, Le Corbusier. In reply to an unusually nasty remark, such as Wright reserved for his oldest friends and warmest admirers, Philip Johnson once said to him: 'You are the greatest architect of the 19th century.' He did not like that; but it contained a real truth. Wright carried on beyond the middle of our century certain aspects of greatness that belonged to an earlier period. Through him the 20th century was enriched beyond its deserts thanks to the fact that there survived well into its third quarter a major architectural force of a protean order such as we will not soon experience again.

Presentation to Mr. C. D. Spragg, C.B.E.

at the R.I.B.A. 7 July, The President in the Chair

The President: Today is a sad occasion but it is also an occasion when we architects would like to pay a tribute to an old friend Bill Spragg, and we are going to make a presentation to him. But before I do this I would very much like to ask Sir Percy Thomas if he will say a few words.

Sir Percy Thomas (Past President): I think probably this occasion is sadder for me than for most of you. I have known Bill for so many years. As you probably know he has been on the staff of the Royal Institute for 46 years and for 40 of those I have been closely connected with the Institute's Council and Committees, including five years as President, and this is the only reason why I have the honour to talk here tonight.

He was appointed Secretary in 1945, following the retirement of Mac, and I think I can say quite honestly that no one has given more loyal and devoted service to the Institute than Bill Spragg. He went through the Registration battle and helped Mac in guiding the Act through Parliament. He looked after the Registration Committee—what anxious and strenuous days they were. He has been Secretary of the Joint Contracts Tribunal.

On visits abroad—trips to the Dominions —with those lucky Presidents—Graham Henderson, Basil Spence and Kenneth Cross—I think they well know how extremely valuable it was to have Bill with them.

We are here tonight to say farewell to Bill. We of the older generation remember him for his great integrity. He has always been a loyal friend, and at times a cheerful companion on the golf course and elsewhere. Speaking as a Past President, his sound advice and never failing guidance were always at the disposal of the Presidents he served. As Secretary of the Institute he well fulfilled the hopes of those who insisted on his following Mac. May I wish him a very happy retirement, which he has earned.

The President: Now before I make this presentation on your behalf I would like to say a few words about Bill. First of all, I would like to thank, on behalf of Bill, all the members of the Institute who subscribed to this fund. After consultation with Bill, we have taken out of the fund a gold watch, which has been inscribed with the R.I.B.A. badge and a little message, and also to Bill's sister, Mrs Fidler, a gold watch.

Bill is known to many people overseas. Believe me these trips abroad are only attractive from a distance—there is an awful lot of work to be done and during this strenuous time the Secretary is responsible for all the arrangements. We are most grateful to Bill for having organised three tours. One, to Canada, with results that brought great benefits and connections that cemented the Institute and the Allied Societies. Two, the trip practically round the world with Kenneth Cross. A very tiring operation, but extremely successful. Three, the visit to Africa.

Sir Percy has said that Bill has been here 46 years. When he came to the Institute I was six years old and it is a sobering thought to me.

Among Bill Spragg's many gifts are his tremendous gift of friendship with members all over the world, and his extraordinary gift of memory by which he can remember the names of so many of the 18,000 members and incidents, which endears the Institute to overseas members.

(*The President then read a few of the numerous telegrams that had come in and made the presentations*).

Mr. C. D. Spragg: First of all, may I express sincere thanks on behalf of my sister and myself for the very splendid gifts which we have received and to all those who so kindly contributed to the fund. I am very glad to have this beautifully inscribed record of all their names. We shall treasure and prize these gifts.

This is not the time or place to give a talk on the affairs of the Royal Institute as seen by one who will shortly be a spectator on the touch line, especially as refreshment is awaiting us all upstairs, but perhaps you will kindly give me a few moments of your time, as I should like, however inadequately, to express my gratitude to a host of good friends.

Sir Percy Thomas and the President have been far too kind in their generous words, but that is part and parcel of their good-natured dispositions and it is pleasant to be made a fuss of. Thank you both very much. And I am grateful to the Past Presidents who sponsored the appeal. One of the chapters of the book which I may, or may not, write will be entitled 'Presidents I have Known'. I have known no less than 22 Presidents, starting off with the redoubtable Sir Reginald Blomfield, but all I would say now is that during my period as Secretary the Presidents with whom I have been privileged to serve have all been delightful people, and I have been extremely fortunate. We all very much regret the loss so recently of Herbert Aslin, who signed the appeal, but I am glad that Mrs. Aslin has been able to join us this evening. I am sure too we all mourn the death of Mr. Goodhart-Rendel, who was another for whom I had a very great affection and who was a very good friend.

To Jeff Mathews, who has taken upon himself and his office the whole task of organising the appeal, collecting the funds and arranging this function, I would offer my very sincere thanks. And thank all of you for coming here this evening—many from distant parts, including Mr. Frank Hargrave from Canberra.

I have been, and am a very lucky individual, for so many members of the R.I.B.A.

both at home and overseas, are my close personal friends, and it is given to few to experience the kindness and hospitality which has been extended to me in every part of the Commonwealth and the United States. The overseas tours in which I took part, first with Graham and Mrs. Henderson, secondly with Kenneth Cross, and more recently with Basil and Joan, were all outstanding experiences, and I do plead that these contacts with our members and Allied Societies overseas should be maintained and strengthened in the future.

This business of retiring cuts both ways—as Boadicea said when she put her chariot in reverse. It will be good to have a more peaceful existence, and those of you who have been in the centre of things at Portland Place in the period since the War, would agree that there have been worrying and anxious times. On the other hand I sort of feel in my heart of hearts that I shall miss it all very much after all these years. Certainly it will be sad not to be meeting so frequently lots of nice people, and I shall miss my visits to the Allied Societies who have all been so hospitable.

It has been a great privilege to work for the Royal Institute over all these years. There have been many changes. When I started the membership numbered 4,561 members and 369 Students. Today it is 18,711 members and 5,490 Students. It is an interesting fact that the total number of members has more than doubled and the Associates nearly trebled since I became Secretary. The staff in my early days was 14, as compared with 93 today. One of the major changes has been in the constitution of the Council. In those days the Council consisted mainly of architects in private practice, and comparatively few from outside London. Today, even before any further reconstitution takes place whenever that may be, the Council really covers the whole country, and contains a large proportion of salaried members. I suppose one of the highlights of the years between the two wars was the registration fight, culminating in the passing of the 1931 and 1938 Acts. Some of the older members here will no doubt remember the wide divergence of opinion in the profession in the years shortly after the First World War, when the question of absorbing the Society of Architects was under consideration. Another highlight was the competition for the headquarters building and the move from our old home in Conduit Street to Portland Place.

The most striking thing in these 40 odd years is the amazing change in the practice of architecture and the character of the profession, especially in the post-war years and the advent of the Welfare State. Whether the change is good or bad is not for a cautious official to say even though he has only got three weeks to go.

I served a long apprenticeship to my old chief, Sir Ian MacAlister, from whom I learned much and to whom I owed a tremendous debt. I have been blessed with colleagues on whose loyal support I could always rely. My grateful thanks to all of them. In addition, I have had the happiest relations with my opposite numbers in the kindred professions and the building industry. As for the technical Press, while sometimes they have been beastly to the R.I.B.A., my personal relations have always been very happy.

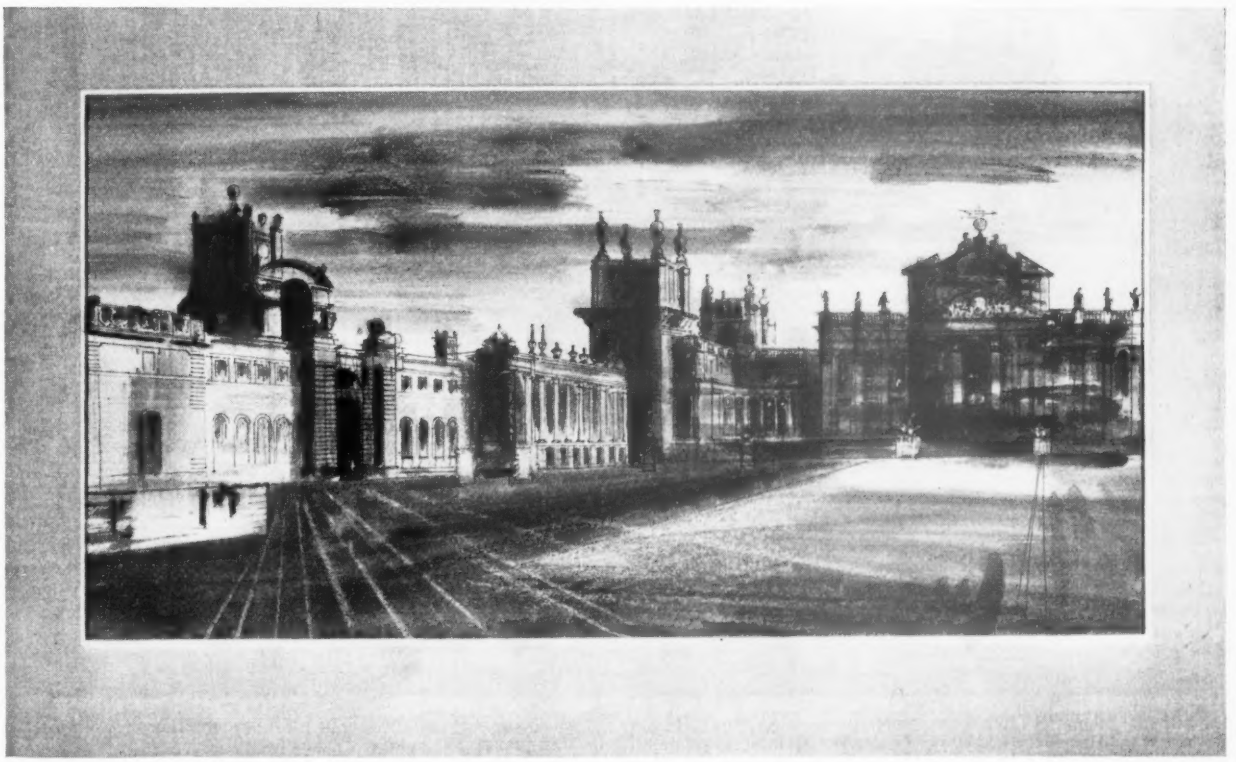
Last, but not least, I would say thank you to my sister, who has been deserted so often when I have been away on my R.I.B.A. travels. She has been very tolerant and forbearing. That is why I am particularly glad that she has been included in the presentation.

Needless to say, I shall take the keenest interest in what happens at Portland Place, and hope I may have the opportunity of meeting many old friends from time to time.

May I wish my successor, Gordon Ricketts, the best of good fortune. He is taking on a tough assignment, but if he receives, as I am sure he will, the good fellowship which has been extended to me, he will find it a very worth-while and stimulating experience.

These words of mine are very inadequate, but you will understand that it is not easy to say all that is in one's heart. My grateful thanks to you all, and to my friends who are not here, for the very great kindness I have received.

Reproduction of the painting of Blenheim by Mr. John Piper [*Hon. A*] which the President presented on behalf of the R.I.B.A. to the Institute of South African Architects in commemoration of the opening of their new headquarters building, during his tour of South Africa last March.



The Punshon Memorial Church, Bournemouth: architect, Ronald H. Sims [*A*], which has been awarded the R.I.B.A. Architecture Bronze Medal in the area of the Hampshire and Isle of Wight Architectural Association for the four-year period ending 31 December 1958

Medal in

JOURNAL

Discussion, first day, on:
The Role of the Architect in Efficient Building

Held in the Reardon Smith Lecture Theatre at the National Museum of Wales
Mr. Basil Spence, O.B.E., T.D., A.R.A., A.R.S.A., President, in the Chair

INAUGURAL MEETING

The President: The theme of this conference is 'The role of the architect in efficient building', based on a series of articles on 'Architectural Management' by W. S. Gauldie and A. F. S. Wright of which copies have been distributed to the members of the conference. Two introductory papers will now be read, the first by Mr. Sheppard Fidler, Vice-President R.I.B.A. and City Architect of Birmingham, and the second by Mr. Alick Low [*F*], of Messrs Norman and Dawbarn.

Mr. A. G. Sheppard Fidler: Last year at Newcastle upon Tyne this Conference discussed a primarily aesthetic subject, design in towns, which then was, and indeed still is, of topical interest to our profession. The subject-matter of this Conference is of an essentially practical nature, but it is equally topical and perhaps of even greater general importance than that of last year. It is of the greatest importance that we should examine critically and carefully the role of the architect as an efficient business man as well as his role as a trained designer.

Indeed, the nature of architectural practice has changed significantly in recent years to meet the vastly changed circumstances of world economics and progress in science and technology. New buildings are required for new needs as our complex civilisation advances. It is of the greatest importance that the architect as a professional man should hold his own in this competitive field of skill and knowledge and be recognised, accepted and required to act as the leader of the design team which produces buildings for society's needs. The long-haired purely artistic architect now hardly exists; it is essential that the architect should also have the ability to organise and direct and should have a wide knowledge of the skills of the many other professional and technical men who are concerned in the design process.

There is a real danger that the good architect, unless he is also an efficient architect, will fail to leave his mark on the contemporary scene. The true function of the architect is the designing of good buildings, and these are not abstract or academic exercises in aesthetics but are produced to meet the defined needs of the client, who expects his money to be spent wisely. It is therefore of the first importance that members of the architectural profession should gain the respect and confidence of members of the public by consistently meeting practical needs with the utmost efficiency. If they do this, clients will be more likely to follow the advice of their architects on matters of taste.

At this Conference we are turning our attention inwards to the problems of management which can have a bearing on the efficiency of our practice, and, because we are not the only professional people concerned in the design process, we shall also consider the relationship of these skills to our own as well as to many other matters not concerned with the direct running of an office but which condition and influence the methods of practice and the architect's part in the building industry as a whole.

It is natural for us to consider ourselves as professional men with considerable knowledge of organisation and administration; otherwise, how could we run our practices as efficiently and as profitably as we do? But, as conditions constantly change, it is wise and valuable to review the means of office management used in offices of various size and by discussion to see whether or not reorganisation and change are needed. Good management can give architects more time for their real job: the designing of buildings, and can consequently lead to greater productivity in building operations.

The purpose of my paper[1] is to comment briefly on certain aspects of the subject of the architect and efficiency more especially from the official architect's point of view, but perhaps I may in these introductory remarks comment on some of the points which I consider to be of special importance.

When I consider this question of official and private practice, I find that the differences are very few so far as actual practice is concerned. One of the main differences, of course, is that an official practice enjoys the advantage of having an assured programme of work, and in certain classes of work, such as houses and schools, secures considerable knowledge and experience in dealing with the specialist design problems involved. The larger authorities can effectively conduct research to supplement official guidance received through Ministry handbooks and other agencies. The results of this research can greatly help efficiency and reduce the research time ordinarily required in the early stages of a project.

In an official practice the client's instructions are usually transmitted to the architect by the chief officer concerned, for example, by the chief fire officer for fire stations or by the welfare officer for old persons' homes. These officers are usually very conversant with the practical and functional requirements of the proposed buildings and can brief the architect accordingly. For projects which break new ground detailed research work has to be carried out as a preliminary to design. In this situation I feel the need of a first-class technical information service such as that now under discussion at Portland Place.

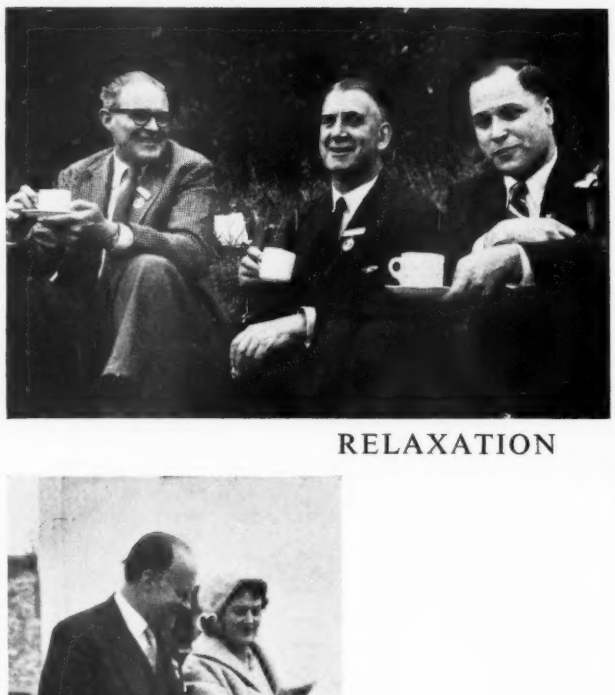
A knowledge of building costs is an essential part of successful practice, and the attention paid to this by architects and quantity surveyors in recent years will help us to plan accurately and to avoid the horrid stigma that architects are not interested in the cost of the job, except perhaps to increase it. An efficient architect ought to be so aware of structural developments and costs of alternative materials that he can readily give advice to the client.

Clients are always amazed that the designing of a building takes such a long time, and, even when the need for it is explained, there is still great pressure from the client to prepare a scheme in a considerably shorter time than the job really requires. It would be futile to make rash promises, but time is money both to the client and to the architect, and it is a measure of efficiency to be able to design and erect a building quickly. Some months ago the R.I.B.A. carried out a review of the time-tables of over 300 projects. This was done at the request of the Ministry of Works, to prove that a considerable period of time must elapse before the effects of policy are felt in an actual building programme. This review is of particular interest to architects, because it showed that the average design time for a project was 20 months, ranging from 13 months average for a factory to 26 for a public building. The low average for factories was partly due to the fact that negotiated contracts were used on a considerable scale and that information was available from previous jobs on which buildings could be readily priced.

Other buildings which had a low average design time were those where the contractor had an architect on his staff as part of his own organisation. This is a challenge which our profession in general has to meet, because 'package deal' types of contract are now being prepared for many kinds of building and not simply for industrial work. Both official and private architects have to meet this challenge. The challenge is, how can design time be reduced?

It can be reduced, I suggest, by the architect being very fully aware of alternative methods of construction, prefabrication

R.I.B.A. JOURNAL, June 1959.



WORK

RELAXATION

Top: Conference session in the Reardon Smith Lecture Theatre at the National Museum of Wales

Centre: Messrs. W. S. Gauldie [*F*] and A. F. S. Wright [*F*] of Dundee, with Mr. W. A. Allen [*A*]

Right: Mr. A. G. Sheppard Fidler (Vice-President), City Architect, Birmingham, at the rostrum

Top: The Garden Party in the grounds of St. Fagan's Castle, now the Welsh Folk Museum

Centre: L-R, Mr. P. F. Burridge [*F*], Borough Architect, Southend-on-Sea, The Secretary, R.I.B.A., and Mr. Jeffrey Aronin [*A*], having a cuppa

Left: The President, R.I.B.A., and Mrs. Spence

and so on, and being able to consider the actual construction process while he is designing the building. Use of type details on a considerable scale can be made, and basic specifications can also help to reduce this time factor. The architect must organise the work so that jobs can be programmed through the office in the shortest possible time. Many of us believe that by fully planning the work of an office, helped by first-class management, buildings can be designed in a very short time. This not only helps the architect but is also an aid to productivity on the site.

I attempted a certain measure of adjustment of management in my own office about a year ago, and immediately started to design a very large refuse disposal works, costing about £500,000. A great deal of this building is, of course, mechanical equipment, but, even so, by putting a team of three men on the job we found that we could design the whole thing right through and get tenders in in just under twelve months.

In my paper I refer to the question of professional fees and throw out for discussion the idea of a comprehensive design fee. Mr. Low will develop this in greater detail.

The design programme is also complicated by the selection of consultants and specialist subcontractors. I point out that architects should endeavour to reduce prime cost items to a minimum and avoid nominating subcontractors and suppliers to such an extent that there is little for the main contractor to do but organise and finance the job.

The practice of using selected lists of contractors for tendering is steadily growing, even amongst local authorities. The Joint Consultative Committee is about to publish its codes of procedure for selective tendering in the hope of consolidating the experience so far gained and leading to even more effective results. In the building industry, design is normally separate from production, and this is its greatest disability. This, of course, does not affect such an industry as the motor car industry, where the whole process of design and production is welded together throughout the whole organisation. In the building industry there is a complete break in communications at the tendering period. It is still comparatively rare for a builder to be selected without competition, and I think it will be a very long time before clients, public or private, will be convinced that the competitive system is out of date.

Perhaps the best way of forming a bridge between architect's design and contractor's work is by having a pre-tendering conference in the architect's office of all the contractors invited to tender, at which the architect and consultants will explain the project in some detail and give information about responsibilities and the procedure to be adopted. I feel certain that if high-level representatives of the building contractors were to attend such a conference they would have a much better appreciation of the work to be carried out and the client would benefit by having keener tendering, more related to the job than to individual items listed in bills of quantities.

Finally, is there any real reason why Government departments should not prepare work programmes covering two years, as the Ministry of Education has done, or, better still, three years? This would have a profoundly beneficial effect on efficiency in architects' offices and on the building industry.

These are some of the many things which affect architectural practice, as I see it. Other offices provide other problems and other considerations, and I hope that a frank discussion today and tomorrow will stimulate ideas and lead to satisfactory solutions.

Mr. Alick Low then read his paper as printed in the June JOURNAL.

DISCUSSION: FIRST DAY

Sir Thomas Bennett [*F*] (T. P. Bennett and Son): The first two speakers have outlined the general problem which the Conference is to attempt to discuss and to analyse and, if possible, to find an answer to. We are all now familiar with the fact that the general approach of architects to the practice of architecture has changed materially in the last 50 years. The old era, with wealth in the hands of a few individuals and a small number of societies and associations, which meant that the architect of 1900 could exercise his design imagination and disregard time and cost and had few technical difficulties to cope with, has passed away, and we are faced with a different approach to building and in many ways with a different approach to our own profession.

The previous speakers have divided the subject under two headings: (i) the efficiency of our own offices and how we run them and (ii) the efficiency of the compact which we attempt to carry out with the public at large. I should like to start with the second subdivision. There has been a sort of revolution in building since we have arrived at an age of steel, reinforced concrete, heating, ventilation and acoustics. All sorts of mechanical equipment have now become an essential part of building. Many people have said that the task should be one for a team of people, working, presumably, together in one office. That, I think, is largely a fallacy. It is not possible to have such a team, at any rate to a greater extent than is represented by the conductor of an orchestra and the players of individual instruments.

The members of the particular professions concerned, with one-track minds, are solely concerned with their own little piece of the story. It has been my experience that they have an extremely woolly view of the precise things that really matter to the client. With the greatest difficulty do I get an exact comparison of the cost of running a heating scheme with solid fuel, oil, electricity and gas. With the greatest difficulty do I get a structural engineer who is a steel specialist to tell me that a building is one for which I ought to employ reinforced concrete, and the concrete specialist cannot bring himself to believe that there is any case in which he should use steel. I am becoming more and more convinced that the only man who can direct the contract with efficiency, whether for a public authority, an individual, a large company or a nationalised industry, and the only man who has the comprehensive knowledge to do so, is the architect himself, if efficiently trained.

We then have to face the question of how to acquire the knowledge which is needed for control of so diverse a series of technicalities as those involved in a large modern building. The architect cannot become a great calculator of steel and concrete or a great heating and ventilating engineer with a knowledge of all the ramifications and details involved. I think, however, that if we start in the school with a proper approach to architectural education, if we approach it with the consciousness that there is a portion of all this work which is within our own ability and which we can control, we shall arrive at a right appreciation of what the architect is expected by the efficient client to be able to do. Once the architect occupies that position, and can say, with a sufficiently broad knowledge of the principles, what he wants to see incorporated in his building, he will have acquired the confidence of the building public, and all this talk about package deals, specialist contractors and the rest of it will become complete and utter nonsense.

Everybody knows that the man who sells a preformed building, involving a large amount of background research, does so primarily to make larger profits than he can make by other means. It tends, because it has cost a great deal of money to bring into existence, to be recommended for unsuitable types and occasions. The builder who advertises a complete service, with quantity surveying and everything else thrown in, is not doing so primarily because that is the best way to build, but primarily to get rid of control. If his experience of control by architects has been a frightful nightmare, he perhaps has some reason for what he does, but if his control has been intelligent and well informed, with a full grasp of economics and costs and the other things which go with the proper practice of architecture, the only reason for getting rid of control by the package deal is that he makes a larger margin of profit on the building when he puts it up.

We come back to the fact that the efficient architect is an absolute necessity for building in this country today. There has never been a time when our standard of living was challenged more severely than it is at present by the young nations of the Far East, who must of necessity be allowed to grow, and who must of necessity in the course of that process attempt to undersell us in all the markets of the world. We as a profession are the people who saddle our manufacturers, our individuals, our associations and our nationalised industries with their capital charges. Those capital charges have to be repaid over periods of

30 to 50 years, and therefore are a permanent weight on production in competing in world markets. There is no doubt whatever that we are the people who can overload the costs which ultimately have to be charged, and therefore it is right that the public as a whole should look to us to be people of real responsibility who can direct the mass building effort of the country.

I am certain that if the architect really sets out to equip himself properly for this job he is better able to direct the method of constructing a building, and to know the right sort of questions to ask the specialists for his particular building, than any sectionalised engineer or building or contracting organisation or any seller of a prefabricated article. We must of necessity have a large measure of knowledge to enable us to do this, but if we consider and decide exactly which branches of knowledge we can acquire we shall have begun the story which leads ultimately to the confidence of the public and the right responsibilities for ourselves.

We must move also to a second examination, an examination of the way in which this knowledge must be applied and used in offices of different shapes and sizes. We can begin with the largest type of official office. It is usual there to have departments under the architect's control for general purposes which deal with calculations of structural work and mechanical services and so on. In the largest private offices a sensible architect will have on his staff engineers in these various categories. On my staff I have structural engineers, electrical engineers, heating and ventilating engineers and plumbing engineers, in order to be sure that I have day-to-day advice of the right kind at the right moment. That does not say that when dealing with a building which is really complicated and involves difficult structural problems I do not go to one of the leading consultants in the country. It is stupid to say that we cannot use the vast knowledge of some of the contracting firms. We have to learn the right performance specifications and obtain tenders and make use of that knowledge in the interests of the client and of the work.

Many subcontractors design to meet their own methods of construction, and by that means are much more economic than using a consultant for their particular branch. We are the people who have to decide how to harness those contractors and their knowledge for the benefit of the building and the client.

We then have to consider the position of a very large number of very much smaller units, and it may be part of the job of this Conference to endeavour to find out how units of other sizes cope with the need to maintain contact with the essential engineering services which are part of their buildings. There is the small municipal council office, which is often entrusted with work of substantial value. We have the offices attached to some of the smaller industrial organisations. There is a duty on such architects to know when the job with which they are entrusted is really beyond their architectural capacity and they ought to call in somebody else to do it. It is no good going on and getting into a muddle, and having your name attached to something which you know is not really efficient, because you have never met that kind of problem before.

There are, according to the recent R.I.B.A. census, a very large number of one-man practices in the country, or practices with only one or two people. We want to know how these people, faced with the need for this same engineering background, get the knowledge they need, if they get only one large job, and control the contractors who carry it out.

Then we have the fallacy, advertised very largely by the contractor, that the builder ought to be brought in at the early design stage of the building. I have never heard more utter nonsense. To bring in a contractor at the early design stages is to bring in a man who has no experience of design at that stage and who knows nothing about the imaginative laying down of plans and elevations and who will be entirely out of his element. It is different when you have stabilised the design plans and elevations and come to the elements of construction that you propose to use and come to something about which the builder ought to have some knowledge.

The builder knows about organising the contract. That is his part of the work. All the successful builders that I have known, of whatever size, when you get them into a proper discussion, away from their publicity agents, have no doubt that that is their province. They emphasise the other side only for financial purposes, or perhaps because they have had an unfortunate experience with an architect. You cannot judge a whole profession because some of its members make mistakes. If this Conference manages to get a sound analysis of how to run the big offices and the smaller offices and to control all this knowledge it will have taken a large step forward in the practice of architecture.

The President: Thank you very much, Sir Thomas, for that useful, delightful, true and amusing contribution.

Mr. J. M. Austin-Smith [*F*] (J. M. Austin-Smith and Partners): I am afraid that I am going to be desperately boring and dull; in fact, I beg your pardon in advance because I am going to give you a lecture. You will have noticed that Gauldie and Wright, in their series of papers which have been distributed, call the excellent study which they did of their office a 'method study', and in their conclusion they say:

> 'The method of working which we have described in these articles has emerged from analysis of our own personal problems. That is why we have called it a "method-study", although we are well aware that management-consultants use this term to describe a much less amateurish process.'

It was thought that as this term 'method study' might be used a good deal, it would be a good idea if somebody explained what in management circles 'method study' means, and I have to do it.

It is a technique of management. There are many techniques already in our profession—tender procedures, cost analysis and so on. This is a management technique. It is quite a complicated affair. It takes at least six months to become a fully trained work study engineer. There are probably very few building components which come on a site which have not had the benefit at some time during their manufacture of a work study department. Almost every large building firm has a work study department. I.C.I. have a vast department and not a single article is made or a single building put up without going through their work study department. In a lecture which is to last only ten minutes I can give you only a glimpse of the subject, and I hope that those who know more about it will bear with me.

Work study, of which method study is a branch, is the systematic, objective and critical examination of all the factors governing the operational efficiency of any specified activity in order to effect improvement. Work study has two parts, one of which, method study, which is what I am going to talk about, is intended to improve ways of doing work resulting in a more effective use of material, plant, equipment and man-power. The other branch, which is very complicated, is work measurement. Method study is the systematic analysis of existing or proposed methods and the development of improvements through critical examination.

What is the basic procedure of method study? First, you must select the work which

Basic procedure

Much of the value of method study is due to the flexibility with which the techniques may be used in so many different problems. There is, however, a simple framework for their application in any circumstances:

SELECT	— The work to be studied.
RECORD	— All the relevant facts of the present (or proposed) method.
EXAMINE	— Those facts critically and in sequence.
DEVELOP	— The most practical, economic and effective method, having due regard to all contingent circumstances.
INSTALL	— That method as standard practice.
MAINTAIN	— That standard practice by regular routine checks.

Fig. 1

Process chart construction

The construction and interpretation of process charts are simplified by the use of two or more of the following symbols * which divide the task selected into five functions; all activities can be so divided:

Symbol	*Activity*	*Predominant result*
○	OPERATION	Produces, accomplishes, furthers the process.
□	INSPECTION	Verifies quantity and/or quality
⇨	TRANSPORT	Travels.
▽	STORAGE	Holds, keeps or retains.
D	DELAY	Interferes or delays.

Fig. 2

MULTIPLE ACTIVITY TIME CHART

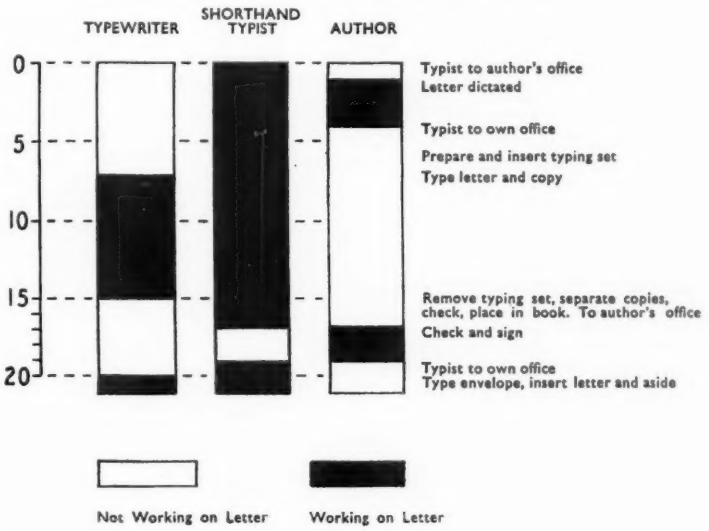


Fig. 3

FLOW DIAGRAM

Operation: Writing a letter using a shorthand typist.

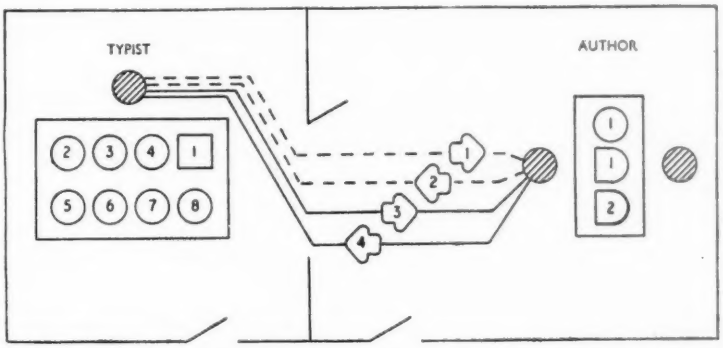


Fig. 4

Figs. 1-4 are reproduced by courtesy of the British Institute of Management from *Outline of Work Study*, Part II: 'Method Study'.

is to be studied. That is obvious. Next, you must record all the relevant facts. You must then examine the facts critically in an ordered sequence, and then develop the best method in the prevailing circumstances and install the new method (Fig. 1). I shall deal mainly with recording and examination.

In this recording you use certain symbols (see Fig. 2):

I propose to take a very simple example, the dictating of a letter to a shorthand-typist. Here we have the sequence:

- dictating the letter
- typing the letter
- checking the letter
- signing the letter
- placing the letter in envelope.

We can separate this into the author, the typist, and the material, the content of the letter, in the way shown. Another way of looking at it is shown in the accompanying diagram. This shows the proportion of the time for which the typewriter, the shorthand-typist and the author are working. (Fig. 3). Another way of looking at it is by means of a flow diagram, showing the various movements involved. (Fig. 4.)

There is a great deal more that could be said. This recording is only a conventional way of doing it, but what follows is most important. We have to analyse what is done, and to ask ourselves what is the purpose, what is achieved. Is it necessary, and why? What else could be done? Then there is the place. Where is it done? Why? Where else could it be done? Who does it? Could anyone else do it? There is a complete series of questions with a logical basis.

With regard to the uses to which this can be put, it must be realised that this is a complicated matter. It can be made to look very simple, but it is complicated. It is, however, virtually what every architect does when he starts to analyse and design a building. He has to go through this process of systematic thought. At schools of architecture we were taught that we could not start straight away on a subject; we had to do research. This is the fundamental process through which the architect goes, so that I think that a knowledge of this is essential to the architect from the planning point of view and also from the point of view of his own office organisation. Another point is that it is used by manufacturers of building components and by builders on the site, and, as Mr. Sheppard Fidler has said, we must understand the techniques used by other members of the team. From that point of view also, therefore, this is something which we should understand.

Mr. Alexander Gordon [*A*] (T. Alwyn Lloyd and Gordon): I propose to make a contribution on two points; one raised by Mr. Sheppard Fidler—the question of a consolidated fee, and the other raised by Mr. Low—the question of the client's confidence in his professional adviser. That is to say, one matter of procedure and one of management. I will, if I may, take the second point—the simpler one—first. I propose in each case to speak from practical experience, based on what we do in our

office (which is a private one of medium size) and what we find works.

In each issue of our South Wales Institute of Architects Journal we invite people from outside our profession to contribute their views on architects. In one of these articles a solicitor suggested that we fell into four classes:

1. Good designers and good administrators
2. Good designers
3. Good administrators
4. Neither good designers nor good administrators.

He then went on to say, 'Those in Class 1 are few in number; but they are grand to meet and a joy to consult, and they invariably achieve success in the proper as well as in the popular sense'. I would like to tell you his analysis of each class, but there is not time. Our aim, the aim presumably of these Conference papers, is for us all to try to get into Class 1.

In any organisation, large or small, there must be delegation, and this means that every person to whom authority and responsibility is delegated has the reputation of the whole office in his or her care. The first task, as I see it, therefore, is the development of reliability. The architect's office has to develop a reputation for alertness, for prompt action, for keeping things alive and generally for not letting the client down. This means that each member of the office team has to develop these qualities individually, and however good architects and assistants may be in other directions, some are naturally better than others on the question of reliability. Some are naturally reliable, some know that they may have a poor memory and take steps accordingly, and others do not act on their own and require encouragement.

I am convinced that no one can rely on memory alone and I never feel entirely happy about a person who attempts to do so. He may be all right when conditions are normal but in periods of rush or strain he, and consequently the system, breaks down. It is desirable, therefore, to cut out the human element and to do this we have attempted to develop organised memory aids. The most important of these is perhaps the simplest: the keeping of day to day notes by each member of the team, with simple reminders as to whom they intend to write to, to phone, to speak to, or action they intend to take. This is in the form of a pad carried in their notebook, available at all times for entries to be made; it is the one place to which they refer always for the necessary reminder. We use check lists wherever possible. We have an automatic reminder system for the sending out of regular reports. Wherever possible also we develop drills and reminder sheets for repetitive operations, such as invitations to tender, opening of new files, etcetera. We find it essential to have a system to bring all the facts accumulated during the design process together in one place for reference during detailing, specification writing and so on. This is done by the use of a loose leaf folder book for each job, with standard provision for the recording of specification notes, facts on services, information for preliminaries, names of contractors wishing to tender, record of the various approvals obtained and to be obtained, the interchange of information and drawings between consultants, etcetera.

The use of these aids to memory in no way curbs initiative, but leaves more time for design and the things that matter.

In introducing systems I find there are two necessities. The first is flexibility, constant amendment to meet changes, and the second is to keep one step ahead and to introduce the new assisting procedure before the problem has developed into a crisis. Personally, I am prepared to accept casualties and would never hesitate to put a system into effect because there was some slight doubt as to its practibility or effectiveness. I do not expect each new system introduced to work, nor am I afraid to discard any if they are unwieldy or can be improved.

So much for my suggestions regarding management, and now a word on the question of consolidated fees. I endorse the views of Mr. Sheppard Fidler that a comprehensive design fee is desirable, and during the last few months we have given considerable time to the development of a system. This meant that for the first time I have had to concern myself with the method of assessment of fees of the other members of the design team, the consultants and the quantity surveyor, and found the complexity such that apart from the amount of the fees and the exasperation which the clients must feel over having to deal with so many different people, I can well appreciate their annoyance over the uncertainty as to what the final fee is going to be. On many occasions we, as architects, have simply forwarded the small grey book to the client and felt that we had done our duty. I now realise how unsatisfactory this is and how unhappy a client may feel about so many possible amendments, alterations and additions to the fee from the architect alone. When he gets similar documents from all other people the position becomes impossible.

Our first thoughts were that we must bring the fees of each member of the consortium to a straightforward percentage and clarify, as simply as possible, the method of making adjustments when departure from this percentage was unavoidable, while, of course, respecting in each case the existing scale of fees of the various professional bodies. We soon realised that any fee quoted to the client would be effected by the scope of the work handled by consultants and it would not be possible or fair to ourselves to quote a final fee until at least the sketch plan stage. Initially, therefore, we tell the client that the overall fee will be approximately X per cent and confirm this (or adjust it as necessary) as soon as the form of the job is clear, at the same time advising him of any special work undertaken by the members of the team up to that date which calls for a supplementary fee. We find that most work of this nature, such as a special investigation of alternatives, does take place in the early stages. A study of the changes likely to be made after the sketch plan stage showed that these fell into two categories: (1) additions which are taken care of automatically by an adjustment of fees on the final cost, and (2) omitted works and changes in the scope of the work involving additional design but not additional cost necessarily.

Perhaps the most difficult work to be brought down to a simple percentage is that of the quantity surveyors, with their rather complicated method of fee assessment. One difficulty was removed automatically by the principle of re-calculation of fees on the final cost, but it was necessary to avoid supplementary accounts for the usual services additional to the preparation of bills. Our standard agreement now, therefore, asks for a single percentage to cover preparation of bills, interim valuations, estimates, approximate pricing of bills, annotation, financial statements of work in progress, remeasurement works, adjustment of P.C. items, nominated sub-contractors' and suppliers' accounts; but the quantity surveyor is only asked to quote a percentage when he has reasonable details of the nature of the work. It is somewhat surprising to find that when brought down to a single percentage the total quantity surveyor's fee on a job of say £20,000 may be 4 per cent or over, whereas the architect's fee, taking into account the reduction on consultant's work, etc., may be only 5 per cent. Since going into this subject, I have formed the view that just as an architect's fee is reduced in respect of the work handled by consultants, it might be reasonable to expect that the quantity surveyor's fee should be reduced in respect of large P.C. sums for specialist work, where no quantities are involved and which may represent 30 per cent of the total cost.

I can perhaps best explain our final scheme by showing you the draft agreement forms which we use.[1] The first one is between ourselves and each other member of the team, and agrees with each the estimated value of the work with which they are concerned, the straightforward percentage figure applicable, the basis for variation of charges, out of pocket expenses not exceeding a certain figure and any additional fees in respect of special services undertaken before drawing up the agreement. After its signature the only adjustments that can be made are as laid down in the agreement.

We then consolidate the various percentages in relation to the current estimate to arrive at the total fee which I have completed for a typical £100,000 contract. This shows a figure of 11½ per cent which is not perhaps unreasonable in total, when one remembers that should independent consultants not be involved, the figure included by engineering firms for design work only may be comparable. I feel, nevertheless, that if by co-ordinated effort and adjustment of fee scales a full design service could be offered for 10 per cent, we would have something definite to offer to combat

[1] *See note at the end of the report.*

the all-in service. I appreciate, of course, that on larger schemes, involving repetitive work, a percentage down to or below this figure can be achieved within the terms of the existing scales.

Finally I show the comparatively simple agreement between the building owner and ourselves which states the overall percentage and consolidates the information contained in the individual agreements. We forward to the building owner copies of these separate agreements entered into with the other consortium members and also a copy of the sheet showing how the consolidated fee is calculated. It is necessary to make clear to the building owner what proportion of the total fee (usually appreciably less than half) goes to the architect.

Our scheme has only been in operation for a short time, but we find that private clients, particularly industrial ones, much prefer the consolidated fee and the fact that they deal only with one person who is responsible for the whole team. Strangely, we find that some local authorities and public bodies prefer the single appointment, favouring their own selection of team members, who are thrown together regardless of whether or not they produce a happy group, and foregoing the advantages and increased efficiency of a team selected by one person to bring to the problem that harmonious approach which can be achieved only through mutual respect and compatability.

Mr. Thomas Mitchell [*A*] (Thomas Mitchell and Partners): My office consists of myself, two younger partners and generally about twelve assistants. All our work is of a nature which requires specialist collaboration with other professions, and the nature and efficiency of that collaboration is very important for our personal efficiency. So far as structural and civil engineering are concerned, we have for many years gone to one individual firm. We consult that firm regularly on everything, irrespective of how small or large the work is, irrespective of whether any official appointments have been made and irrespective of any arrangements about payment. The arrangement gives a service which could not be bettered if our offices were in fact amalgamated. The only point is that they might be closer together. At this point I would make a plea to local authorities that when briefing private architects they should respect any arrangements of that nature which exist and refrain from nominating consultants other than those with whom the architect normally works, because such an arrangement benefits the client.

I wish that I could say the same about the various heating and ventilating and mechanical and electrical consultants with whom we have worked. The structural and civil engineering profession, by and large, is varied on the consulting side with offices of different sizes and matches very fairly the needs of the architectural profession. If there are any deficiencies, they lie mainly in the manner in which the skills are employed.

The heating and ventilating, mechanical and electrical professions are not so well matched to our needs. There is a shortage of efficient consultants of this type. I hope this point will be made in the talks which the R.I.B.A. is proposing to have with the various allied professions, for it affects very much the efficiency of my size of office.

Mr. Arthur Hall [*F*] (Harry W. Weedon and Partners): No one has so far mentioned or applauded the excellent two-page spread in the WESTERN MAIL dealing with this meeting. It is a habit which the press has here, to deal with meetings of this kind in that way. In the SOUTH WALES ECHO, I found another article which dealt with how to get a grant from the Government for a bathroom if you do not possess one. I should like to read an extract from that article:

> 'This is what you have to do:
>
> Ask an architect, builder or plumber to draw up plans for the improvements you want; . . . When the council has approved your plans and agreed in principle to make a grant, give instructions to the builder or plumber.'

That, I think, puts the architect properly in his place in public estimation. What we are trying to do is to find means of improving that estimation by making ourselves more efficient.

In my firm, which is a large one, covering most classes of work but about 50 per cent occupied with industrial building, we have a cardinal maxim laid down at the foundation of the practice in 1919 by our esteemed principal, Harry Weedon: that is that we cannot hope to win and hold the respect and confidence of our clients unless our organisation is at least as efficient as theirs. Nor can we hope to execute work that satisfies them and ourselves both practically and aesthetically unless we start from that premise. To ensure that there should be no confusion among us as to what we aim to do and how we mean to do it he wrote in 1932 a complete description of the organisation, which was re-written in 1946 and is now overdue for a new edition. It embodies 40 years' experience in about 90 pages. The fact that it requires re-writing at about twelve-year intervals shows that times change, our ideas change, and that new blood brings improvements. How many architectural firms in this country or any other ever set down on paper what they aim to do and how they want to do it? It is an exercise that can be recommended with complete confidence; it works.

In the course of our experience a *modus operandi* is produced, largely a matter of the control and conduct of the firm's internal and external business. It involves numerous forms, minuting procedures, reports and other control mechanisms—I have learnt three new ones this morning! Most firms undoubtedly invent their own, and there must be a vast amount of know-how tucked away in offices all over the country, never seen by anybody but the people who operate it. Now these two matters, the structure of architectural practices, their aims and methods, and their control devices, are subjects that should be freely discussed among architects. I suggest that the Institute should make it the business of its committees to produce some of its rewarding symposia, supported by an exhibition of means and methods, so that we can all ventilate our ideas and swop notes. I am sure that we should all derive immense benefit from it. The local government offices should participate; they have the biggest staffs and most complex control systems. Moreover, they run on public funds and the shareholders have some right to know how the money is spent.

The next item on which I should like to drop a few clangers is that of staffing. One finds generally that there are two main classes of staff. One is the sturdy type brought up in the office, happy to stay there for years, infinitely well versed in its methods, tackling whatever turns up and doing it very efficiently, within the established and accepted framework of the organisation. The other is symbolised by the gilded youth straight from the schools, with a glossy new diploma and itching feet. He wants to teach you how to design and starts in to reform you, your architecture, your office and your methods of administration, all in six months so that he can be off to evangelise in further fields. I raise this question because I am not alone in hoping that educational reforms now proposed will not deprive the future of the first class and leave only the second.

Lastly, I want to put forward, mainly for discussion as I hope to learn more about it, the question of internal co-ordination of the results of design study and materials research. In small offices this problem does not arise, because one group of architects generally works closely together to solve all new problems handled by the office. In the largest offices it is more easily solved, as the organisation is able to carry a centralised bureau or information centre whose business it is to receive, collate and disseminate the answers to the innumerable and ever increasing problems of modern architectural design and practice. In the average large organisation, such as ours, containing say six or seven groups of between three and fifteen architects, each under the leadership of a partner, associate partner or group leader, new work coming in must be allocated not always to the group most familiar with that class of job but often to one which happens to have the man-power immediately available. How, then, does one make sure that the knowledge and experience already available in the office can be used, and so prevent each group or unit from going off along its own lines and spending—one might say wasting—time on fresh research on problems already solved? How does one collate all the knowledge, acquired over many years of practice, about the nature and behaviour, and particularly the weakness and failure, of various materials and structural methods?

Again, when very large projects come into the office, beyond the scope of any one unit, they must be split up between several units, and then the strictest control must

be exercised to co-ordinate details throughout all parts. For example, on one current large contract, containing about 20 separate buildings, we found each unit designing all sorts of doors, all with different details and of different sizes. This was solved by the leaders of the units forming a sub-committee of the general committee controlling the design of the whole job, and by dint of hard work on the drawing board and round the committee table eight door types were evolved to cover the many hundreds of doors required, which meant that the contractor had to deal with very few types.

It is not my intention to attempt to answer these questions; I am just asking them, and since this is a conference on efficiency in architecture the answers should be forthcoming. However, I do not agree that efficiency in architecture is new; walk round the walls of Cardiff Castle and marvel at the efficiency displayed there by William Burges, acting for the Marquis of Bute. No matter how long it took, and how much it cost, it could not have been done without tremendous efficiency; and it was not done in this century.

Mr. A. B. Waters [*F*] (Llewellyn Smith and Waters): I believe that the quotation which has just been read out about the architect, the builder and the plumber emanates from the Ministry of Housing and is an official explanation of how to get this money.

My contribution to this discussion follows on from that of Mr. Austin-Smith. I want to begin by making two quotations from Mr. Low's paper, each of which emphasises the need for the architect to adopt a management approach to the control of building jobs. Dealing with the experts who advise architects, he says: 'Each of these specialists is now firmly established in the practice of designing in a field only vaguely familiar to the architect.'

Later, he said: 'The ever-decreasing responsibility of the architect reduced his overall control of a job and the integration of the various designs becomes more difficult as the several specialist offices adopt their own way of working.'

It has been emphasised this morning that building has become a very complex operation, and in consequence the specialist is increasingly necessary either in the form of consultant or in the form of the sub-contracting firm which offers specialist advice. It is sometimes argued that the specialist could with advantage be employed within the architect's organisation, and Sir Thomas Bennett has said that he employs in his office men to give him the sort of advice that he needs; but he at once went on to say that if he has a difficult job he goes outside.

I feel that the employment of specialists within an architect's office is very likely to have the same effect as the employment of an architect by a builder for carrying out the package deal. It results in lack of experience. If we consider a consulting engineer having equivalent fees to those of an architect he must do five times as many jobs, and it should follow from that that the sort of advice he should be able to give, subject to the limitations which Mr. Mitchell has talked about, would be based on very much wider experience than would otherwise be the case. Accepting that specialists are necessary and that they work in different ways, it is for the architect, if he is not to lose control of his job, to manage his specialists. He can familiarise himself with the methods which they use, and I think that by looking after them and adopting this management attitude the ultimate result can be satisfactory.

As some of you will know, this question of management has been the concern of the R.I.B.A. On two occasions, at the invitation of the London Master Builders Association and in association with the quantity surveyors, there have been management courses at the Sundridge Park Management Centre. Last year two conferences were held. The first was an appreciation course, intended to give an indication of general management responsibilities and then to relate them to the building industry. The second, which was attended by those who had been to an earlier appreciation course, was devoted to the study of one aspect of management, namely communications.

Gauldie and Wright in their articles recognise two stages in the building contract, the pre-contract stage and the post-contract stage, and this definition was accepted in drafting the syllabus for the second management conference (the articles at that stage had not been published). The subject of communications was treated under two headings: (i) What methods of communication are used in the industry prior to starting work on the site (the pre-contract stage), and (ii) to discuss the effect on productivity of communications and in particular make suggestions for improvement in communications after work has started on the site. A summary of these discussions has been published in the form of a report.[1] In some respects it is wider than the published papers for this Conference and it should be a help to anyone who wants to go further into this one important aspect of communications.

Obviously a matter of this sort comes back to education, as all things do, and at the conference to which I have referred we had a third problem to discuss, namely how the principles of management should be taught. That discussion and the recommendations that followed from it also form part of the report, and I believe that this subject is going to be considered at the forthcoming seminar of architectural teachers.

Summarising some of the things discussed in that report, the most important aspect of communications is the information issued in the pre-contract stage. This involves obtaining a satisfactory brief from the client, which we know is a very difficult thing to do, and persuading him that the important date is the completion date and not the date when work is started on the site. It may also include instructing him in contract procedures.

If the start on the site is not rushed there is time for adequate preparation of drawings and specifications and also to co-ordinate the work of specialists, including getting some precise details from them. The quantity surveyor is then presented with a clear picture and the bill of quantities becomes a more valuable document. The contractor can be handed drawings which are virtually complete when the contract is signed, and at least he can be given a list of the drawings which are still to be issued.

I think it is common knowledge that the Ministry of Works regard their recent system of fixed price tendering as extremely successful. They claim that it has resulted not only in lower tender prices but also in a reduction in building time. If that system is analysed, however, it will be found that it is virtually complete preparation. A fixed price tender merely means, in effect, that the fluctuation clause is eliminated. Fluctuations on a job carried out quickly are not a material matter, and it comes back to this complete preparation of information before the work is put in hand. That reduces the number of changes, apart from those which, for example, in industrial work a client may find unavoidable, leaving the architect free to supervise the work from a building point of view and leaving the builder to get on with his job of building. This necessitates, of course, earlier appointment of the quantity surveyor and of the consultants concerned. It avoids variations and keeps costs within the contract sum.

This leads me to mention the R.I.B.A. Cost Control Committee, whose published work and conferences will be known to you. What the Cost Control Committee advocate is that if a proper costing plan can be formulated, which relies on relating the number of imponderables to the client's purse and what the client wants, that can be worked to while the working drawings are being prepared, and in the end the tenders will turn out to be right. We must make it clear that we as architects are able to formulate time programmes to which we can adhere, and that we can also give realistic estimates of cost which will not be exceeded when the work is carried out.

Mr. John Stillman [*A*] (Stillman and Eastwick-Field): I wish to take as my text an old joke about the managing director who called his staff together and addressed them, saying, 'This firm is like one large happy family—and it's got to stop!'

Looking up the definition of 'efficiency' in the dictionary I found that it said 'the ratio of useful work performed to the total effort expended', and of 'efficient' (of persons) 'productive of effort, competent, capable'. This is the more relevant. I think that, like genius, efficiency involves a capacity for taking infinite pains. I should like to say something about it as it affects small groups of architects who work together in private practices.

There are two kinds of efficiency: as seen by the client, and as seen by the private

[1] 'Communications in the Building Industry'—copies are available on application to the Secretary, R.I.B.A., price 2*s.* 6*d.*, postage 4*d.*

architect. As seen by the client, the architect is efficient if he produces a satisfactory building at the agreed cost and within the agreed time; but the private architect sees himself as efficient only if he does these things with an expenditure of effort which in terms of his own costs leaves him some balance of his fees with which to pay his staff properly and to live himself whilst working on the next job.

These two aspects of efficiency can, of course, be contradictory. If the architect spends too much time being efficient for his client he will not have enough money and his internal efficiency cannot be maintained. On the other hand, if he works out ways of getting the drawings out quickly he may skimp the work, in which case the job suffers. There has to be a balance, and I think that the correct balance is difficult to achieve. This question of efficiency is, in my experience, easy to talk about but much more difficult to deal with in practice.

On the question of the size of office, I should like to make a case for the office with two or three partners and about ten assistants—the size of our own office at the moment. I do not say that because our own office is this size, but because in a very small office when two or three jobs come in together it is not possible to use the staff with the best efficiency. You are snowed under for five or six weeks and the work may be delayed, whilst at other times there may not be enough to do. An office of about ten provides some flexibility, and at the same time allows the partners to do a good deal of designing and to see their clients personally and be in touch with every job.

This constant personal contact is something which is very difficult to replace. When offices get much bigger it is almost impossible, and I think that much of the organisation in the bigger offices is necessary simply to replace this personal contact. I am intrigued by the fact that the large office is frequently organised in groups which are based very much on a practice of the size which I have discussed, with a group leader and ten assistants, the group leader acting very much like a private architect. This I think proves my point that that is a good size for a working unit.

I should like to cross swords with an earlier speaker about the advantages of the big council office. I know that there are many members of this Conference who come from such offices, but in defence of the private practice, which I know some people think is now an anachronism, I would say that as size increases so administration increases, and the enthusiasm which is found in the small office may be difficult to maintain when the staff runs into hundreds. Then there must be rules and regulations and special people to write specifications and architects who are not allowed to see their client. I think that these disadvantages outweigh the advantages of continuity of work, better salaries, better pensions and the other things that the big office can do. I do not suggest that this will continue; I think that the better large office is better because it finds ways round these difficulties.

In the larger office, as I have said, a good deal of paper work is required to make up for the lack of personal contact. The single man must rely on his memory, but as the practice grows something has to be done to augment memory. My golden rule is to do the very minimum necessary. It is wrong to try to produce some memory aid for every process, because these aids will not be used. There is a tendency in small firms to allot one assistant to each major job, and to employ a new man to deal with each new job. The danger here is that one might be let down by a new assistant who does not come up to expectations.

To avoid this possibility we organised our small staff into groups of two or three, each group to deal with several jobs. To assist in continuity, we made for each job a detailed job diary which consists of printed loose leaf sheets on which are recorded all the essential data about the job and the information necessary to check its progress.

After several years' experience we find that we can be rather more flexible in our organisation and we now reserve job diaries for the more complex work. We also take account of the differing personalities of the architects who are associated with us. Some will be able to cope with records meticulously, but others never will, and that has to be accepted. To condemn people to keep detailed records when they are not temperamentally attuned to it is not a good plan.

We have set our faces against any kind of specialisation. It has been suggested to us that it is more economical for the office to have a back room for design, a working drawing pool, and specialists in outside supervision and job administration. This may be more efficient, but against it we can say that our staff stay with us and they gain experience. An architect never ceases to learn by working on sketch schemes, doing detail and working drawings, going on the site and seeing how these working drawings turn out in practice.

Then there is the question of how the small practice deals with specialist work. As regards the commercial side we are in the same position as anybody else. We can, like anybody else, find the best specialists in the various subjects. So far as consultants are concerned, our position is rather a special one. We have been lucky in having a great variety of jobs—this is one of the good things about private practice—and our jobs have perhaps been more than ordinarily complicated. We have had to have specialists to help us. We have found in London that if we choose people who are sympathetic to our cause we can get all the consultant advice that we need very quickly and efficiently, and we have, like a previous speaker, consultants who have worked with us for a long time and who are extremely good to us. I do not think that having the design team all in one office is the panacea. We are quite happy with the present arrangement.

It must be borne in mind, however, that some consultants are not sympathetic to architects but seem to be jealous of them. We have come across engineers who are not at all helpful, to say the least, and that makes a big difference. The answer is to insist on people who are sympathetic. I do not consider that this is a matter on which we should compromise, but we have to compromise a little on our technical information and library. We cannot afford even a part-time librarian, and so we look forward very much to the sort of technical information service which has been talked about, which would be a great help to us. We have 40 box files crammed with catalogues and we subscribe to a commercial system which would be fine if it was sufficiently comprehensive.

We find from experience that for every 20 references made to one particular subject there will be only one to another. Architects who are working daily on design may want information, for instance, about the size of rainwater pipes for draining roofs and need it frequently, whereas the thermal insulation of a pigstye may come up only once in ten years. We therefore make cyclostyle copies of data which is most often wanted, to save having to look up the source on each occasion. Sometimes we make a précis and give references, and sometimes we merely copy out the information.

I want to say something about drawings, because this subject has not been mentioned today. I attended a discussion on drawings with junior architects, builders and quantity surveyors some time ago, and everybody on the industry side said that architects covered far too much paper. An instance was mentioned of a house which required 15 working drawings. The builder thought that this was appalling, and so do I. Too much paper arises because the drawings come out of a process of thought and design, and there is seldom time to reorganise them afterwards. More compact drawings would help both the architect and the builder. With regard to the actual technique of drawing, we have tried to give our drawings a professional character and for working drawings favour a kind of drawing shorthand. We do not mind if the lines do not meet or cross provided the drawing is clear and gives the correct information. There is need to speed up the time taken by drawings, because half one's costs go in their preparation.

In conclusion, architects should not only achieve a high standard of efficiency, being up to date in building technique, building science, planning and an understanding of costs, but should transcend these and still be Architects (with a capital A). The basic qualities of the architect's vision are what he is really paid for; nobody else has this commodity.

Architects' reputations are disproportionately injured by a few instances in which jobs have been slower and more costly than the client required. It is therefore commonly thought that private architects are unpractical dreamers with more enthusiasm than business sense, who nevertheless make a lot of money. In my opinion this view is out of date; 90 per cent of architects do very efficient work. Private practice today is in fact very hard work and in my experience, although we just about balance

our budget, the rewards are very much more spiritual than material.

Mr. F. B. Pooley [*F*] (County Architect, Buckinghamshire): I want to devote my time to three contentious points in our profession and the building industry: the package deal, fixed price tenders, and selected contractors.

It has been said of the package deal that it is a very efficient way of building, that its costs are as low as or lower than can be achieved by competitive tendering, and that it produces the goods more quickly than other methods. This system has now been going on long enough for some of us, who did not like it very much, to do some research into it. For the last year or so, although it has been difficult, some of us have got together and have been trying to find out about the cost of these package deals, and during the last month I have been able to come to some conclusions. They are these.

The package deal is about 9½ per cent more costly to the building owner than the sum he could expect to pay by using the straightforward method of contracting and tendering, where the architect enjoys his traditional position of freedom. I think that the position of the architect is such that when he loses his freedom the cost of building to the building owner will go up.

It is also said that the package deal has the great attribute that it produces the buildings quickly and when the clients require them, but I suggest that, if we set about it, it does not need a lot of alteration to our present methods to ensure that we get very quick building with the straightforward method of competitive tender, at the same time giving the discerning building owner the safeguard of the competitive tender. We can achieve this by a slight modification of our standard form of contract. Just after the war, when materials and labour were scarce, clauses were introduced into the contract which enabled most contractors to claim an extension of time if they failed to produce the building quickly. They are always able to produce evidence that the men were not there and the materials were not there. If the contract were restored to its pre-war form, so that the contractor could not claim an extension of time through lack of labour and materials, we should find that only contractors with the necessary resources at their command would tender for the work, and we should with competitive tendering enjoy our free position and be able to show the building owner that we can produce buildings more cheaply than the package deal can and just as quickly. I do not, therefore, see the package deal as a menace; it is just a challenge and one of those pinpricks which will direct our minds to our form of contract. When the Joint Contracts Tribunal meets to produce the new contract I hope it will see fit to remove clause 18.

The technique of fixed price tenders was the Ministry of Works' solution to the problem of producing buildings, the idea being that if the contractor makes a lump sum tender it is in his interest to finish the job quickly. We have had enough experience over the last year or two to find out whether or not that method is cheaper than having a sliding scale with the cost of labour and materials going up and down. It seems from the evidence of the journals that where authorities have asked for alternative tenders on a fixed price and sliding scale basis the fixed price was slightly more costly. Many people will not agree, but I throw that suggestion out because it may lead to discussion.

The other point is: selected lists of contractors. My own experience is that this is a very difficult thing to achieve. I do not think that it is the job of the architect to tell Messrs. A and B that they are capable of tackling a job of £100,000 but not one of £200,000. I think that the profession makes many enemies and few friends in that way. I should prefer to see this idea of a selected list of contractors done away with and to have quite open competitive tenders with a new type of contract whereby if an unsuitable contractor comes in his guarantors or he himself will stand to lose if he does not produce the goods. If that is done we shall find that the only tenders we receive are good and responsible ones.

For the last three or four years we have been trying this out. Our local contractors have told me that we shall have disaster after disaster and that every Tom, Dick and Harry will tender, but we have found that by modifying our standard form of contract and leaving the whole thing open we have had very low tenders indeed. We have been able to demonstrate that they are probably 2 per cent cheaper than from a selected list, and our buildings have gone up within the time allowed.

I leave those three thoughts with the Conference. Is it really a good plan to have fixed price tenders? Is it really a good plan to have a selected list of contractors? Need we really worry about the package deal?

Mr. W. S. Gauldie [*F*] (Gauldie, Hardie, Wright and Needham): An honest researcher always acknowledges his sources, especially when some of them are sitting in the audience, so let me begin by admitting our debt to some of the many people on whose shoulders I have climbed to this platform.

About 15 years ago I happened to be thrown into private practice at the deep end, and one of the straws I clutched at was a paper by Sir Thomas Bennett on 'Architectural Organisation', which had appeared in the R.I.B.A. JOURNAL. One used to hear about old soldiers treasuring the battered prayer book which once stopped the sniper's bullet; in the same spirit I have carefully kept that journal. If it did nothing more it taught me that an office does not administer itself, which is something not always appreciated by newly-qualified architects.

Much later, when my partner and I had splashed along to the shallow end of the pool and could stand up and look around, there was an article in the ARCHITECTS' JOURNAL by Clive Wooster on 'Programming for Architects', to which, among other things, we owe the philosophy of assessing what we call the 'calibre of the job'. Of course all of us do make this assessment in some degree; I've heard of a man who has a two-calibre system for houses: heavy-calibre with bay windows, small-bore without them, but the same plan. It was Wooster, however, who made us see calibre-assessment as a formal and respectable procedure.

In 1956 we became aware of the work of Elder and De Pierro, and although we did not agree with all of their views, we found them tremendously stimulating. About the same time an article by Eric Ambrose about catalogues appeared in the R.I.B.A. JOURNAL. It was a very impassioned *cri de cœur*, which is French for bellyache (I put that in to emphasise the high standard of entry into the profession in Scotland), and it put us on a line of thought which led us to the punched-card specification file.

All these and many more were planting seeds in our minds which suddenly began to germinate in the summer of 1956. I was visiting Denmark, and there one day, on a building site, I noticed that when the architect came round every tradesman on the job took his hat off, right off. It was a beautiful sight; in our country they do not even stop swearing! These men evidently saw the architect as someone right on top of the job; not just the 'leader of a team,' but the director of operations in person. So I started taking a hard look at Danish practice, and everything I saw confirmed that opinion. Their methods were simple and straightforward, their staffs were small, they seemed remarkably free from ulcers, and, most important, they could sell good architecture to the public because the public accepted them as effective people who talked a lot of sense.

All this appealed to me a great deal. I had no illusions about our Scots tradesmen taking off their hats to me, or indeed to anyone else outside of a funeral *cortège*—you can always get respect in Scotland by being dead—but it did seem to Wright and myself that the prospect of producing better architecture with less effort and more profit deserved a bit of agonising reappraisal, which we proceeded to make. Hence these articles; and I want to make it clear that in our opinion such value as they have lies specifically in this emphasis on reappraisal. The essential step is to take a look at one's own practice, and that is a difficult thing to do. It can be literally agonising.

I think that probably it was not until we had boiled the whole thing down to these three essentials of Information, Decision and Communication that we really began to make headway. In fact one of our main reasons for publishing was the hope that putting up this three-way signpost might help other people to get out of the jungle with rather less wear and tear than we had suffered ourselves. I am more convinced than ever that it is necessary to get down to these essentials because today's discussion has underlined the fact that although architects' offices vary tremendously in size

and character many problems are common to all of them, and these problems will yield to concerted attack if we all know how to approach the objective.

In the field of information it is clear that we are over-supplied with some kinds and dangerously short of others. For instance we are short of what I might call 'clinical' information, the sort of thing the medical journals publish to advise practitioners of the failure of methods and materials which have not come up to expectation. That is not one of the functions of our journals, nor is it likely to be as long as the feelings of the advertisers have to be considered, so we are left with a gap which the Building Research Station Digests, excellent though they are, can hardly hope to fill until the politicians are prepared to pay more than lip service to the national importance of building research.

Other kinds of information we have in plenty, but in the most diverse and often unsuitable forms, and the R.I.B.A. committee which is tackling this problem is doing us all a service of the greatest possible value. The validity of our decisions is directly proportional to the accessibility, adequacy and efficacy of the information we get. This is vital because decision is the unmistakable hallmark of leadership. It is not easy to train people to make decisions, especially if you are also training them to be artists, and therefore perfectionists. But it is not impossible to teach them the mechanism of thought by which logical decisions are made, and I want to suggest to the educationists that some teaching in elementary formal logic is a necessary part of an architect's training, and one which is wholly absent from it at the moment.

In the field of communication, I often feel that architect's constructional drawings, even the best of them, are aimed at impressing the contractor rather than instructing him. It is natural and necessary that students' drawings should be designed to *exhibit* their knowledge, but that is a different function; when we grow up what we have to do is to *communicate* knowledge. There is only one valid test of a good working drawing, and that is its usefulness to the builder. Our drawings after all are made expressly for his use. In this sense he is the consumer of our product, and the consumer research which is being done is badly needed. I think it will almost certainly show that we can give the contractors clear and fuller information with much less wasted effort on our part.

I imagine that many more of our common problems will come to the surface in tomorrow's discussion, and none of us dare hope that this Conference will, of itself, produce any kind of magical solutions to them. But what it can do, and is already doing, is to provide the stimulus of an exchange of views among all of us who have been looking for our own individual solutions.

With luck we can, among us, trigger off a chain-reaction whose ultimate result must be a higher standard of effectiveness in the conduct of our own businesses, leading to an increased respect for the profession among the public, and therefore an improvement in the architectural taste of the public, and therefore a very much better environment and therefore, quite simply, a better country to live in. If we can do that we shall at least be entitled to take off our hats to each other.

The report of the second day's discussion will appear in the September JOURNAL.

A limited number of reprints from the ARCHITECTS' JOURNAL *of the articles by Messrs. Gauldie and Wright are available on application to the Secretary, R.I.B.A.*

NOTE:

The R.I.B.A. Council recently set up a Management Committee which is taking over the work of the Cost Research Committee and expanding it to cover office and job organisation: check lists, programming, communications, office methods, etc.

It is hoped that one of its first tasks will be to sift through the forms and check lists now used in architects' offices in a way that will make for simplification. (Several such forms and lists were shown or referred to by speakers at the Conference).

It would help the Committee if as many of these documents as possible could be sent to them, and members are accordingly invited to do so.

The Conference Dinner: Extracts from the Speeches

Mr. A. G. Sheppard Fidler, M.A., B.Arch., A.M.T.P.I. (Vice-President), in proposing the toast of 'The Principality of Wales and the City of Cardiff', said: I know that all members of this Conference have enjoyed being in this spacious and lovely City of Cardiff with its historic castle and its fine civic buildings with their grand setting and such wonderful facilities for social occasions which make our conferences such special occasions. This very spacious layout of Cathays Park is surely the envy of most of our provincial cities. I come from Birmingham and I can tell you that it is certainly my envy.

We would all wish to congratulate Cardiff on now having attained the great status of the capital city of Wales. As architects, we are all pleased to see here Cardiff's recently appointed City Architect who will look after Cardiff's architectural affairs. We congratulate Mr. Dryburgh on his important appointment and wish him all success.

My Lord Mayor, we have already had the pleasure of meeting you on various occasions this week. We feel that in electing a woman Lord Mayor for the first time Cardiff has taken another most progressive and enlightened step and definitely added something more to the charms of this pleasant city.

We architects would like to compliment Cardiff and Wales as a whole on the outstanding success of last year's Empire Games and also on building the splendid swimming baths which remain as a permanent memento of that wonderful occasion.

We are all pleased to see that the development and redevelopment of Cardiff after its bombing is proceeding steadily. I understand that your first multi-storey car park is already under construction near the General Station; but why you need a multi-storey car park when you have all this spacious layout here I do not understand.

We have enjoyed this opportunity of visiting the Principality of Wales, this small but vigorous country of which I think we of Britain are justly proud. In addition to such fine cities as Cardiff, we perhaps know Wales best for its beautiful countryside, its hills and valleys, its coastline, its historic castles and all those other beauties that we know so well. All over the world it is famous for song and drama, and although many people find the language a little strange, you people are courteous enough to allow me to address you in my own English tongue.

I think especially that we should wish success and prosperity to Welsh industry, which is so enormously important to you all. In wishing success to industry, we hope that you will still do all you possibly can to retain the beauty of your villages and preserve the amenities of your own countryside.

I ask you all to drink the toast of 'The Principality of Wales and the City of Cardiff' coupled with the names of Lord Brecon and the Lord Mayor.

Mr. Sheppard Fidler then addressed Lord Brecon in Welsh.

The Lord Brecon (Minister of State for Welsh Affairs), responding, said: You can rest assured that I am not going to reply in Welsh to the toast which has been so delightfully proposed by Mr. Sheppard Fidler.

We are delighted that this Conference has been in Wales, and I should like to thank Mr. Sheppard Fidler for the delightful and gracious way in which he has proposed the toast of the Principality. We are delighted that he is a distinguished son of Wales.

Mr. Alex Gordon [*A*] and Mr. Lewis John [*F*] (now President, S.W.I.A.) of the Conference Executive Committee, with Mr. Stanley Cox [*A*] (centre), member of the Conference Publicity and Exhibition Sub-Committee

Mr. D. Garbutt Walton [*F*], Conference Hon. Secretary (right), with Mr. F. G. Allen [*A*] and Mrs. Allen

I am very glad that the Principality has had this opportunity of acting as hosts to such an important gathering of a noble and exciting profession.

I hope that your members have been able to see some buildings and places of interest to them during their stay in the Principality. Largely because of the facts of economic history, Wales has not the good fortune to possess a heritage of great architectural masterpieces, though there are some instances of good Georgian work, and Wales has, of course, some famous castles, often superbly sited and dramatically related to the landscape. She can also feel proud of her famous bridges, for example the Menai Suspension Bridge and the Conway Bridge, and, we hope, the Severn Bridge, too, although that will not be in Wales; and where the engineering problems have been skilfully tackled with an eye to pleasing proportions, today we have the great industrial concerns producing buildings of great strength and character, such as those at Margam and Pontypool and elsewhere. I am glad that your members have been able to see something of these in tours. It is of vital importance for Wales that her industrial areas of the future should be designed with care. We can now see that industry and ugliness are not inseparable twins, and we all have a responsibility for seeing that the lives of our people shall never from lack of forethought be again overshadowed by drab and gloomy structures.

Here I might perhaps mention that we have had a special problem in Wales connected with the building of new industries in national parks areas. When you realise that one-fifth of Wales is in national parks areas or in areas of special beauty you realise what the problem is. But you, Mr. President, will know this from your own particular interest in the design of the nuclear power station at Trawsfynydd. There you have a great responsibility to see that all is well, because we Welshmen can easily disagree on many things.

I think I should say that we cannot regard our national parks as untouchable museums. The people who live there have a right to work, and with the decline of employment on the land there is a vast need for suitable light industries in the park areas if we are to prevent the drain of population from them. There is no need, however, for new factories to stick out like sore thumbs in a landscape. It is clear that here architects have a challenging responsibility, and I believe that their views are slowly but surely beginning to take effect.

I hope you will allow me, Mr. President, before I leave the subject of industrial building, to mention two matters which are of particular concern to me. In certain parts of Wales there is a pressing need for new sources of employment. I hope that your members, in so far as they may be concerned with the siting of new industrial buildings—and I am sure that they have more influence in this direction than they would perhaps readily admit—will not overlook the new hope and life that the building of a factory in an area can bring to unemployed people.

Secondly, one of the places with a specially difficult employment problem is the slate quarry area of North Wales. I hope architects will always keep in mind the possibility of using slates, especially the smaller slates, when this is a suitable material for the projects on which they are engaged.

It is not only in the new industrial building in Wales that we find a refreshing contrast to some of our older structures. It is especially pleasing to see the light and airy new schools going up in the Principality, so different from the dark and forbidding buildings of 50 and more years ago. In recent years, too, the character of domestic building in Wales has greatly improved, and much praise is due to the local authorities who had the insight to employ reputable architects to carry out their schemes. Many new office blocks are pleasing to the eye and provide excellent working conditions.

It is heartening indeed to see the increasing importance which the general public attach to architecture and the marked improvement in the design of new buildings which has resulted from the exercises of members of your profession. Many of these new buildings are the work of young architects who have taken their professional courses at the Welsh School of Architecture. This school has produced many fine architects over the years, and the efforts made by the teaching staff deserve the highest praise.

I would say, in conclusion, that there are splendid opportunities in Wales for architects to show what they can do. I hope they will find that responsible task of creation both a challenge and a joy so that the people of Wales may in the future look back not in anger but in pride and say 'They built well in those days'.

The Right Hon. the Lord Mayor of Cardiff, Alderman Mrs. Helena Evans, also responding, said: First of all, I should like to thank Mr. Sheppard Fidler for his very kind remarks with regard to our beautiful city—Cardiff, and it is a beautiful city. Our aim as a local authority is to try to make it not only the capital but a capital city too. We are very proud of our school buildings. At the present moment we have schemes before us for a new development in the older parts of our city. We have an extensive plan for the docks area, and that part, which is the oldest part of the city, will also undergo a great change.

I was glad to hear Mr. Sheppard Fidler's reference to our city architect. Our architect and our city engineer are doing great and grand work, and we are proud of them. It is because of their efforts, together with those of the Public Works Committee, that we are going all out to make Cardiff a more beautiful city than it is. We seek not only to make it

At the Garden Party, L–R: Mr. Norman Thomas [*A*], Mr. Alex Gordon and Mr. J. M. Austin-Smith [*F*]

L–R: Mr. Leonard Howitt [*F*], City Architect, Manchester, Mr. David Benton, Registrar, A.R.C.U.K., and Sir Thomas Bennett [*F*]

more beautiful; we also want more employment and better living conditions for our people. We are proud of our housing estate and we are proud of our new schools. We hope to have two new libraries, and we hope to have new homes for the aged.

Here in Cardiff the homes have improved and the people now have good homes. They do not have to go outside for water. They have low sinks no longer. They have all the amenities which every housewife should have. The kitchen is the most important room in the house. We are endeavouring to build our houses on those lines.

I should like again to say how pleased we are that you thought of coming to Cardiff for your Conference, and I hope that you will go away with fragrant memories of all the beautiful things that you have seen in the city and that when you think of them it will be an incentive to you to come here again. For the future, I wish you all the best and good luck in your very important work.

The Right Rev. The Lord Bishop of Llandaff, in proposing the toast of 'The Royal Institute of British Architects and its Allied Societies', said: I consider it a great privilege and an honour to be allowed to propose the toast of 'The Royal Institute of British Architects and its Allied Societies' coupled with the name of your President.

You are most fortunate in your President in every sort of way. He has great versatility, which I much envy. He has been a soldier, and he now spends much of his spare time as a sailor. He not only practises architecture, which is, I imagine, difficult enough, but he has professed.

I think he will be remembered most of all, and that his name will be honoured alongside that of the late Bishop of Chichester, Dr. G. K. A. Bell, for the great revival which they have produced in the interest of the church in art and sculpture and the interest of art and sculpture in serving the church. We owe a great deal to him for his lead in that kind of way.

In proposing your toast, as I hope shortly to do, I should like to look back on architects whose friendship it has been my privilege to count on. I remember Herbert North, whom some of you may remember, working away quietly in North Wales, devoted to the Early English style, so much so that his daughter, his only child, had an early English name. He was devoted also to William Morris, and his house was built of tiles and so on and was very pre-Raphaelite. He found it difficult to get down to practical details of measurements and things of that kind.

Then there was Leslie Moore whose death not very long ago we mourned. He was one of the last of the genuine Gothic revivalists with a passionate devotion to and great knowledge of Gothic architecture.

Then there was Sir Charles Nicholson, whom I knew only in his great old age. He was an ambitious person full of scholarship and learning and extremely athletic. I can see him at 78 running up the ladders at Llandaff Cathedral and scampering along the roof like a good looking and agile monkey.

Then there is my friend, Mr. George Pace, with whom I had much to do. When our association at Llandaff Cathedral ended he wrote me a letter saying 'You have been a wonderful client.' Architects may be able to read a good deal into that phrase. I myself was not quite sure what it meant, because in many ways I had not wished to be a wonderful client.

Then I turn to the South Wales Institute of Architects, which typifies the various bodies that are associated with this toast. I must mention Mr. Cyril Hughes with whom I worked in the building of churches at Swansea and by whose efficiency and devotion I have always been inspired. I could not possibly in this company fail to mention Sir Percy Thomas. I suppose that if every junior officer has a field marshal's baton in his knapsack, many youthful architects looking at this dignified and handsome presence as it moves around Cardiff in a car equally dignified must say 'I shall be like that.'

I hope that you will have much success in the future. Your effect upon the scenes in which we live is very great. I know of no other art that can do so much and do it so easily as architecture in the setting of our lives.

I hope you will always be bold, I hope you will always be imaginative, and I hope you will always be technically competent.

I must make a confession. I have not yet found myself as thrilled by any of our architecture in Britain as I am thrilled by what I have seen elsewhere, such as coal sidings and things of that kind in Italy and offices and so forth in Brazil. But I am well aware of your difficulties. You have the climate to begin with, which considerably thwarts and hampers the more imaginative architect in his flights, and you have here what I do not think they have in those countries, and that is town planners. There are some of them here, and they are obviously excepted from all that I have to say, which will be very little; but their activities sometimes remind one of what Dr. Johnson said about old Mr. Sheridan. 'Old Sheri,' he said, 'Old Sheri, Sir, is by nature stupid, but it has taken great art to reach the stupidity to which he has come today.'

May I, finally, commend to you my own special interest, and that is churches old and new. The shortage of architects, and particularly young architects, able to deal with church buildings is a very grave matter. After all, our ancient churches represent easily the largest legacy and easily the most beautiful legacy of the past that we are able to enjoy. It is absolutely essential that we should have young architects who have made a profound and exhaustive study of medieval and post-medieval church architecture so that we can call upon a supply of men who really

know what they are doing when they come to deal with our ancient churches. It is much more difficult to find them than you would sometimes suppose.

Finally, I suggest that a wonderful opportunity has now arisen in the building of new churches. We have for a very long time been accustomed to think of a church as a nave and a chancel and an altar at the far end. Modern study in liturgy and study of liturgy has produced a quite revolutionary attitude on the part of the Church to the whole structure and the manner of church building. A great opportunity here awaits architects who are prepared to get down to some hard work not only in their own strict line but in the kindred arts of liturgy, history and theology.

It gives me the greatest pleasure—I count it a great honour—to propose the toast of 'The Royal Institute of British Architects and its Allied Societies', coupled with the name of your President.

The President, responding, said: I am sure you would all like me to thank the Lord Bishop for such a charming speech. It was so understanding. How he understands us! I must also thank you, Sir, in a personal way for your very kind references to me; I appreciate them very much.

I do not think it is realised generally how big the architectural profession is and how our members can be found in all the corners of the earth. One of my duties as President is to sign the membership forms, and it is surprising how many races and parts of the Commonwealth make up our membership. It must be remembered that the Royal Institute of British Architects is a kind of commonwealth of architects composed largely of societies allied to the mother Institute.

Not least of the President's duties is to meet as many of the membership as he can in his short, extremely busy period of office. However, the problem is comparatively easy of solution in this small island of ours, and I should like to take this opportunity now, as so many of you are here, to thank the members of the Allied Societies who have invited me, and often my wife, to meet them for their kindness and hospitality.

I am certain that the President of the Royal Institute of British Architects must find time to visit and meet our members overseas. It is a most rewarding thing to do, and most moving. In some cases the isolation of architects is very real, and contact with people from home is a poignant and very touching necessity.

The Secretary and I, accompanied by my wife, made a visit to Africa recently, and we went all over Africa. I can truly say that it was one of the busiest six weeks that I have ever spent, but perhaps the most rewarding. The kindness of these people has to be experienced to be believed. They almost kill with kindness. I had never thought that it could possibly happen to me.

After four hours of fitful sleep in our Britannia we landed at Khartoum as we

The Civic Reception

The Secretary with Sir Percy Thomas

L–R: Miss Ennis Hughes, Mr. C. A. Hughes [*L*], President S.W.I.A., Mrs. Spence, The President, R.I.B.A., greeting Sir Percy Thomas, Past President

Mr. Robert Snodgrass [*A*] and Mrs. Snodgrass from Johannesburg

had had a request for a short visit. As we were gliding in to land I saw the plastic mud houses out of the window and I thought 'Corbusier has been here.' Square, flat-roofed and with the now famous gargoyle, these houses, which have been built like this for centuries, have an amazingly contemporary look.

Our programme said 'Sudanese breakfast with Sudanese Ministers',—Ministers of State, but as we were dozing in our plane a military coup occurred in Khartoum, and when we arrived at the airport we were told that all the Ministers had resigned during the night. So if there were no Sudanese Ministers there was no Sudanese breakfast. However, our 20 hours in Khartoum were a wonderful start to the tour. We visited the university and the old town, which is incredibly interesting, and we had a wonderful lunch with the Ambassador.

Next, Entebbe, which is in Uganda and on the Equator—with Wimbledon villas. Why Wimbledon villas when over here we usually abhor draughts and welcome the sun? Over there it is the opposite way round. I suppose that this is a true case of nostalgic architecture. I ask: Is this a valid form of functionalism?

From there we went to Nairobi, where we saw wild animals in their natural state and architects in their natural habitat. We even attended the first Council of the East African Institute of Architects. The President and Secretary of the R.I.B.A. were present. History in the making! We were most charmingly entertained by the Governors of Uganda and Nairobi, but never shall I forget the flower-strewn streets of Nairobi. It is truly a city of flowers.

Then on to Livingstone and the Victoria Falls—so much water. An American visitor was heard to say to his wife: 'Maisie, this makes Niagara look like one drop of sweat.'

Then to Lusaka and Kariba. What a place Kariba is! There I felt was the only modern work of man that I saw which was really in scale with the African landscape.

Then Salisbury and Bulawayo and our dear friends there who showed us the country and modestly refrained from architectural tours, and what gave me one of my greatest thrills, seeing Zimbabwe, that mysterious ruin 2,000 or more years old, and the amazing rock formations of Rhodesia—Henry Moore on a gigantic scale, thousands of them.

Then to South Africa and Johannesburg, to the hospitality and kindness of members of the South African Institute of Architects. During our short stay, crammed with so much incident, my strongest impression was one of their thirst for closer relations with the mother Institute. This can only result in a greater benefit to both. Let us make no mistake about it: the South African Institute of Architects is an extremely well-run body, and strength will result from associations like this. It is amazing how many friends one can make during a short stay and how their problems can be shown up in sharp relief.

What an experience Durban was! I think of their kindness to me when I spoke to them. They asked me to give them a lecture. It was in a temperature of over 100° F and with 95 per cent humidity. It was the only occasion, I am told, on which the President has worn his badge in shirt sleeves. We visited quite near Durban a game park which is famous for its white rhinos. I crept up to within 25 ft. of one of these beasts and took photographs of it. I may say that the Secretary was nowhere to be seen!

Then on to the Cape, the Riviera of Africa, with wine, parties, barbecues, dinners, broadcasts, speeches, lunches, lectures—a kaleidoscope of events. A gentle expert on Cape Dutch architecture proved to me that the success of the plastic wet wall in that landscape was capable of contemporary indigenous interpretation. We had a wonderful lunch with the High Commissioner which we shall never forget.

How can we thank those kind people? There is no doubt that the office of President was greatly honoured by the enormous thought and trouble that each body of architects has taken all over Africa. I think of the wonderful books which they sent, and I shall always be reminded of Africa when I read them. How can I mention any single person when all were so tremendously kind?

On our way home we dropped in at Ghana for three days. What was the impression there? Humid heat, like the tropical house at Kew; energy—energy and many smiling black faces; an Association dinner and the African dancing in the intense heat at midnight; Kumasi and the solid work done by the Kumasi College of Technology, and to be in at the birth there of an architectural chapter; the new university of Ghana, like a Shangri-La in Africa, a courageous adventure, in the new town at Tena.

And then home.

What has come out of these exercises? To my mind, one thing—the necessity for unity within the profession. There must be far stronger links between all our Allied Societies. These people overseas faithfully pay their subscriptions and sincerely appreciate every gesture from the Institute, and they must, I am certain, be brought nearer to our membership here in the United Kingdom. The architectural profession is badly in need of strengthening, and I believe that it is only through the association of free people who think the same way that strength and common purpose will result.

Our profession, I am sure you will agree, is struggling for adequate recognition. It is only by a unified and strong profession that you will regain lost ground in the eyes of the public. Some of our sister institutions accuse us of muscling in. This is not so. We consider that the architect's voice must be heard. Are they afraid to hear that opinion expressed with conviction and belief? This is the case with the motor roads. A very great problem has to be solved in our cities when these motor roads hit the urban scene.

But please do not make the mistake—we are not making a mistake—of saying that we do not want to be friends with everybody. We do. But I say to you that we must ask that the architect's voice be heard.

Nevertheless, it is only if there is unity and strong association that we can speak in one voice, and that unity can be achieved only by a close association of all British architects in the Commonwealth, of every colour, race and creed, wherever they may be.

I thank the Bishop of Llandaff for the charming speech with which he proposed the toast of 'The Royal Institute of British Architects and its Allied Societies', and all of you for so generously supporting it.

Mr. W. Stephen Thomas [*A*] (Immediate Past President, S.W.I.A.) also responding said: You will be sorry to hear of the recent indisposition of our well-loved President of the South Wales Institute of Architects, Mr. Cyril Hughes. Mr. Hughes has worked awfully hard for this Conference, and I am afraid that he is a little under the weather. I am sure you will join me in wishing him a speedy recovery to full health.

It has, therefore, fallen to me, as senior Vice-President and Chairman of the Executive, to reply to this toast which has been so ably proposed by the Lord Bishop of Llandaff. I should like to say that it is particularly fitting that he should propose this toast, knowing of his great interest in architecture.

The importance of the work done by the Allied Societies is generally recognised. We should remember with pride that these societies have been built up by generations of architects working in their spare time for what they thought was, and what I am sure has proved to be, the betterment of the architectural profession as a whole. I think we must all agree that the achievements of the Allied Societies have been remarkable, and in this connection we must not forget the outstanding work done by the honorary secretaries of these societies, who are really the backbone of the whole structure.

We are honoured by your presence, Mr. President, and on behalf of the Allied Societies and the South Wales Institute of Architects I should like to thank you for the outstanding work that you have done during your period of office. Apart from coping with the routine duties which fall to your lot as President of the Royal Institute, you have carried out a tour of Africa, to which you have just referred, during which you visited Allied Societies overseas. But most of all we thank you for your courage and your vision.

We are very happy that Mr. Spragg is with us again, and we are grateful to him for his untiring efforts on behalf of our noble profession. We wish him every happiness in his approaching retirement. We also extend to his successor, Mr. Ricketts, every good wish in the years that lie ahead.

It is true that we in South Wales are far from the centre of the activities of the

Royal Institute, but I can assure you of our continued and loyal support. The area served by the South Wales Institute is a very wide and scattered one, but we are nevertheless a united body and receive very full and active support from the three branches and have a membership of about 650. We are very pleased this evening to see with us the President of the North Wales Society.

As many of you will know, the last Conference held in Cardiff was in 1922. It is interesting to note that at that time the President of the South Wales Institute was the then Mr. Percy Thomas, now Sir Percy, who afterwards became President of the R.I.B.A., and whose distinguished career has brought so much credit on the profession as a whole and the South Wales Institute in particular.

We are also justly proud of the Welsh School of Architecture, which goes from strength to strength, and I should like here to pay tribute to Mr. Lewis John, the Head of the School, for his outstanding work. Mr. John, as many of you will know, is our President-elect and takes office in July of this year. It is gratifying to see the close ties which exist between our Institute and the Welsh School. At this time they are stronger than ever, and this is of particular importance at a time when our profession is directing so much thought to the question of architectural education.

Sir Percy Thomas, O.B.E., LL.D., D.L., M.T.P.I., Past-President, R.I.B.A., in proposing the toast of 'The Guests', said: It is my privilege to propose the toast of 'The Guests'. You can imagine my feelings when you heard Stephen Thomas say that in 1922—37 years ago—I stood at this table and replied, as he did tonight for the local President. I am afraid that there are very few members of the Institute here tonight who were present on that occasion. Some of them had names which were very well known in our Institute. I remember two who spoke that night. One was Major Harry Barnes, who probably more than any one man piloted the Architects Registration Bill through the House of Commons. That Bill, which gave us registration, was a great step forward in the organisation of the profession. Another name that I remember is that of H. T. Buckland, of Birmingham, who gave the morning address on civic architecture and art commissions. Recent events in our Institute lead me to think that the present members have either never heard of those people or have certainly forgotten them, but I think it is as well that present members should be reminded of the great work that they did in making the Institute what it is today, or perhaps I should be more correct in saying what it was last year.

If I may take my cue from the toast list, the first is the Principality of Wales and the City of Cardiff, which have been well represented by Lord Brecon and by the Lord Mayor. I should like to take this opportunity, my Lord Mayor, of extending our congratulations to you, the first lady Lord Mayor of this City. I know from personal experience of your hospital committee that we are in for a very happy year indeed.

In the short time that he has been Minister of State, Lord Brecon has proved that his appointment was one of the outstanding successes of this Government.

We are glad to welcome the Lords Lieutenant of Glamorgan and Monmouth. Lord Raglan has often been a guest at our local dinners, and whether the subject was Welsh architecture or the Welsh language, he was equally forthright.

We are also glad to see so early in his appointment the new High Sheriff of Glamorgan, Mr. John Cory.

Next we come to the Church. The Bishop of Llandaff, who has already addressed us in such an interesting and amusing speech, has, as you know, always taken a great interest in architecture. We also welcome the Dean of Llandaff.

Education is represented by Lord Kenyon and by Mr. Presswood; and the Government Departments and nationalised industries—you would naturally expect them to be at a gathering like this, they are nearly all clients of ours—are represented by the Controllers and Chairmen of the Board of Trade, the Welsh Board of Health, the Ministry of Housing and Local Government, the Ministry of Works, the National Coal Board, the Gas Board and the Electricity Board. The local authorities are represented by the Mayor of Newport and the Deputy Mayor of Swansea and the Chairman of the Glamorgan County Council.

Industry is represented by Sir Julian Pode, who has done so much to make the Steel Company of Wales known not only in England but throughout the world. We also have with us Mr. Charles Jenour, Chairman of the Industrial Estates, and Mr. Southall, of the B.P. Refinery, Llandarcy.

We have a number of visitors from kindred societies and representatives of the building industry, and, last, but certainly not least, we have the ladies who do so much to make these functions not only delightful but decorative.

Before I conclude, I should like to add to what Mr. Stephen Thomas has said by saying how much in South Wales we regret the departure of Bill Spragg.

I have to couple with this toast the name of Sir Godfrey Llewellyn. It would be difficult to find someone who could more adequately represent in one person so many aspects of public life. He can reply for the Army, the Navy, the Territorial Association, Industry and also now the Hospital Boards, and if there are any other groups that I have not mentioned, I am sure he represents them.

Sir Godfrey Llewellyn, Bart, C.B., C.B.E., M.C., T.D., D.L., Chairman of the Welsh Regional Hospital Board, responding, said: Sir Percy, I should like to thank you for the very charming speech in which you proposed this toast. An enormously long list of some 73 guests which has been given to me shows how much your invitation, Mr. President, has been appreciated.

Your guests tonight include representatives of Her Majesty The Queen, the Government, local authorities, museums, professions, industries, commerce and the Press.

We have the privilege of dining tonight in the chief hall of the chief building in the centre of this capital city whose civic buildings have been described as being among the most beautiful in this country, but one cannot help wondering what buildings would have been erected if they had been designed in the present day. Would they then have been described in the same terms, or only perhaps as 'really remarkable'?

Far be it from me in my ignorance and nonsense to decry the modern trends, which at any rate have the merit of being very expensive, but I can at any rate with more experience applaud this dinner and the manner in which you have entertained us. Here you have excelled in your profession as architects on a beautiful evening, and I would once more thank you on behalf of your many and very appreciative guests.

Mr. D. Garbutt Walton [*F*]: As you heard earlier, Mr. Spragg is here at this Conference for the last time.

We feel in Wales that we cannot let this occasion go without giving it some mark. I asked one or two people what Mr. Spragg did in his spare time. Apparently, he reads, and he reads a great deal, because he has selected *The Second World War*, the great work written by a great man, Sir Winston Churchill. But the greatness of the work and the greatness of the man who produced this work cannot exceed the measure of the feeling and the sincerity which not only the architects of the South Wales Institute of Architects but the architects of the Principality of Wales wish to extend to you, Bill, in appreciation of the great work that you have done. I have pleasure in handing you these six volumes, which, I imagine, will take some considerable time to read. With them go our best wishes for your future and our best thanks for your past.

Mr. C. D. Spragg, C.B.E. (Secretary, R.I.B.A.): Thank you very much for this generous and kindly thought.

The R.I.B.A. has been a fairly hard taskmaster, and the reading that I have done has been mainly of subversive papers like the ARCHITECTS' JOURNAL, the ARCHITECT AND BUILDING NEWS and the rest. I have had very little time for reading things that I should like to read, and I shall enjoy Sir Winston Churchill very much.

I am sorry in many ways that I am going, but I shall be glad of a rest. One thing that I shall always prize is the tremendous friendship of the innumerable good friends I have made in the profession, not least, of course, in South Wales. Thank you very much; I am most grateful to you.

Technical Column

FOR MANY YEARS there has been an article in the JOURNAL each month called 'Review of Construction and Materials'. This has not appeared recently since it was felt that the review of new products could be more adequately undertaken at this time by the Technical Press, which can devote more space to reviews appearing at more frequent intervals.

At the present time there is increasing activity on the 'technical' side of the Institute's work and it is hoped that the re-organisation of the R.I.B.A. Committee structure will facilitate this work. In this column I hope to concentrate mainly on the work being done within the Institute, to show how this fits in with the general development of the industry and how the work of other organisations completes the pattern. This should give members an opportunity of commenting on matters being discussed in committee and should enable you to contribute to the work of the R.I.B.A.

Technical Information Service for Architects

During the last Session much committee time was spent discussing information for architects; for this reason this article is largely devoted to how and in what form we get our information. The Council have now approved in principle that the Institute itself should provide a technical information service. Three aspects of such a service are being considered, a personal inquiry service, that is to say the answering of individual inquiries received by post or telephone; the extension of the reproduction service already offered by the library whereby copies of articles can be obtained for a small charge; and a series of monographs, built-up on the accumulated experience of members, on subjects not otherwise covered.

A new technical information committee has been formed to co-ordinate all work on this subject and it should be possible to report progress in this column during the coming session. At the same time manufacturers are continually being asked to give more comprehensive and factual data in their trade literature which, after all, is one of our major sources of information.

Two basic requirements for readily filable literature are: standard sizes and pre-classification. Both these requirements have been considered and I think that it is worth saying a little bit more about the present situation.

'A' Series of International Paper Sizes

Recently many references have been made to the standardisation of paper sizes: an article was published in the R.I.B.A. JOURNAL (May 1958), Mr. Eric L. Bird [*A*] referred to it in his paper on the 'Problem of Technical Information', Mr. Dargan Bullivant [*A*] wrote to the JOURNAL following this meeting, and at the same time three of the Institute's committees were drafting a report recommending the Council to standardise the sizes of its own publications and to invite the building industry to do likewise. The Council accepted the recommendation and the results are now becoming apparent. Institute publications on these sizes are readily recognisable because at the same time that the Council agreed to the size standardisation they appointed Mr. Herbert Spencer to be the consultant typographer. So far between 40 and 50 items have been re-designed and their sizes standardised; the remainder of the R.I.B.A. publications are being reviewed and will be revised as stocks run out.

In order to encourage industry to adopt these sizes, Mr. Alick Low [*F*] has prepared a leaflet describing the sizes and explaining the advantages involved for architects. All members can help in this campaign, which is a first step towards improved trade literature, by explaining the advantages to the manufacturers they meet. These leaflets are available from the R.I.B.A. and replace the postcards requesting manufacturers to produce trade literature to B.S. 1311. The first paragraphs of the new pamphlet read as follows:

'Trade and technical literature is an essential source of information for the architect. Each day he receives numerous catalogues, brochures, and technical reports. It is necessary for him to keep these in such a way that they can easily be referred to and used in the future. Particularly in a small office this can be a considerable task, one which is aggravated by the fact that at present literature is produced in innumerable different sizes.

'When a catalogue is very large, for instance, it has to be placed away from other material on the same subject and is easily overlooked. Similarly if it is smaller than the majority of other papers it can slip down between or behind them and not be seen. Papers of different sizes are difficult to keep in an orderly and efficient fashion and those that project are inclined to be damaged. Again many catalogues are accompanied by letters, addendum slips, duplicated notes and so on. If these are to be kept together they should all be the same size.

'If all reference literature is produced to one size, it is a simple matter to keep it in order, there is little chance of it getting lost; folders, binders and other containers can be designed more economically; and shelf space can be used to its maximum.

'For these reasons the Council of the Royal Institute invite all those organisations concerned in producing literature for the building industry to adopt the "A" Series of International Paper Sizes. In particular they ask that the size A.4 (11¾ in. × 8¼ in.) should be used for all papers which are required to be kept for reference.'

Classification

The problem of keeping information tidy, and of being able to find it when it is needed, is one which bothers almost every architect's office in the country. For a long time there has been a need for a simple method of classifying technical data for filing. For almost as long, it has been realised that if the bulk of the profession could be persuaded to adopt the same system of classification, technical information could be pre-classified by the publishers, and that at least a minor improvement in the productivity of architects' offices would result.

In 1957 Mr. Dargan Bullivant was awarded the ARCHITECTS' JOURNAL Research Fellowship to study 'information for the architect', this work included the study of many systems of classification used in various countries and his conclusion was that the S.F.B. system used in Scandinavia was the most practical for the building industry. He had, however, some criticisms of the system as did the S.F.B. Group of the International Committee on Building Classification. For some months Mr. Bullivant has been working with them towards an internationally acceptable solution to the problem.

In September the I.B.C.C. will present a proposal to the Congress of the International Council of Building in Rotterdam. This proposal, it is understood, will be suitable for both trade literature and technical reports, etc., and will cover: planning and design generally, building operations, elements, components and materials, building types.

The Institute has been anxious for many years to find a system suitable for architects and consider that before there can be general adoption of any system there should be: a firm table of contents; a simple system of notation; a comprehensive index; and a guide for architects on how to use the classification for filing.

They will be watching the outcome of the Rotterdam Congress to see whether the system of classification is likely to be suitable for general adoption by architects.

B.B.C. programme 'Building Matters'

Many organisations are concerned with information for the building industry and probably the newest recruit is the B.B.C.—architecture is a subject frequently mentioned in programmes and now there is to be another regular feature.

As from 29 September they will be putting on a new programme on Tuesdays from 7 to 7.30 p.m. on Network Three for people concerned with or interested in building and its problems. The talks will cover every aspect of the industry, from planning and design to materials and their handling by the large scale organisation and the master builder. It will be an open forum in which all relevant subjects can be considered and discussed. The programme will not be confined to this country but will extend to developments abroad. In addition each week a short news bulletin will

be given by William Bryant, editor of THE NATIONAL BUILDER.

Practical subjects to be discussed in the first few weeks will include modern interior wall finishes, concrete for the small builder, small-bore pipe heating and the causes of and cure for damp. On 6 October a fortnightly series will open on 'Know Your Industry' and on 20 October there will be a discussion on 'Does the future of the industry lie in the All-In Comprehensive Service?'

Consultants for the series are Keith Alsop, F.R.S.A., of the Building Research Station; William Bryant, of the National Federation of Building Trades Employers; Gontran Goulden [*F*], Deputy Director of the Building Centre, and Edward Mills [*F*]. Introducing each programme will be Charles Crichton, D.S.C., Director of a London building firm who has trained as an architect, was at one time a technical journalist and is a member of the Institute of Builders (he has also been an actor). The B.B.C. producer is Robert Gunnell.

T.D.A. publications free to R.I.B.A. Students

The Timber Development Association have offered in future to supply copies of their publications free of charge to R.I.B.A. Students. If you wish to obtain a publication it will be necessary for you to state that you are a Student member of the Institute. Application should be made to the Association's head office at 21 College Hill, London, E.C.4, or to their regional offices.

Testing of model structures

Recent experience has shown that the testing of model structures for design purposes is a technique which is assuming considerable importance.

In view of the experience already gained in this field by the Structures Research Department of the Cement and Concrete Association the Association has decided that in future it will undertake model testing of concrete structures on a cost basis. Initially the amount of work undertaken will be limited by existing facilities. Work which could more appropriately be carried out in a commercial testing house will not be undertaken.

Inquiries in connection with this aspect of the Association's work should be addressed to Mr. A. W. Hill, B.Sc.(Eng.), A.C.G.I., M.I.C.E., D.I.C., M.I.Mun.E., M.I.Struct.E., Deputy Director of Research and Technical Services, Cement and Concrete Association, 52 Grosvenor Gardens, London, S.W.1.

Electric Floor Heating

One of the first meetings at the R.I.B.A. for the next Session will be a discussion evening on 'Electric Floor Heating', the Chairman is to be Richard Eve [*A*] and as is usual at this type of meeting, drinks and buffet refreshments will be on sale beforehand. The meeting will be at 6.30 p.m. on Wednesday 18 November, all members of the building industry are invited to come and to participate.

Recently the Electrical Floor Warming Association was formed, it is hoped that members of the new Association will be able to attend but in any case informal meetings are likely to be held between the Association and the Institute's Technical Department.

ANTHONY WILLIAMS [*A*]

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT. Multi-Storey Buildings. Sir Alfred Bossom asked the Minister of Works, in view of the steadily increasing number of multi-storey buildings both now constructed and projected in many parts of Great Britain, what preparations are now being made for a nation-wide building code to apply to those to ensure that they shall be designed and constructed to embody the best-known principles for safety and economy, and with proper consideration for rights of adjoining owners and the use of adjoining thoroughfares.

Mr. H. Brooke: I have been asked to reply.

The fact that more high buildings are being constructed will certainly need to be kept in mind when the model building bye-laws are revised. As regards economy, I have nothing I can add to the reply I gave my hon. Friend on 29 January. The effect on adjoining property and thoroughfares is a matter for consideration by the local planning authority whenever permission for a multi-storey building is sought. (30 June 1959.)

Multi-Storey Buildings. Sir Alfred Bossom asked the Minister of Works, in view of the fact that there are a considerable number of multi-storey buildings now being constructed and projected, what special effort has been made to ensure that the knowledge of the chief principles involved are known to those responsible for the expenditure of public money in connection with this special type of building.

Mr. Molson: I am sure that the considerable body of experience in the erection of these buildings accumulated over the years is well known to professionally qualified persons both in the public service and outside. Research into the economics and techniques of high building construction still continues and my Department, together with the Building Research Station of the Department of Scientific and Industrial Research and the Ministry of Housing and Local Government, is concerned to see that the latest information is suitably disseminated. My hon. Friend may like to refer, as an example, to those parts of the publication *Flats and Houses* 1958 which deal with multi-storey flats. My Department's exhibit at the forthcoming Building Exhibition will deal with the provision of services in high buildings. (30 June 1959.)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Selected Planning Appeals. The Ministry have issued a new series of planning appeals being notes of cases decided by the Minister in 1958. The cases are grouped together in sections mainly according to the character of the proposal and sections 1 to 5 are prefaced by a brief statement of the Minister's general policy on the class of case in question.

Circular 40/59 dated 24 June addressed to Local Authorities in England and Wales contains the following paragraphs:

> Planning authorities are at present accustomed to inform applicants of any decisions (whether by themselves or by the Minister on appeal) which seem to them to support their decision on the current application. I am desired by the Minister to ask that they will also refer applicants to any statement or case in 'Selected Planning Appeals' which seems relevant, in order that applicants may have a full opportunity of assessing for themselves the chances of success on an appeal.
>
> The Minister is extremely anxious to reduce the total number of appeals, if that can be done without in any way derogating from the right of appeal. He believes that many of the appeals might never be made if the authority would take more trouble to explain to the applicant the policy which underlies their decision, or (where agreement seems possible if the proposal were to be modified) the changes which they suggest and the reasons for suggesting them. He hopes that the publication of these selected appeals, and in particular the statements of general policy, may help authorities to play their part in reducing the number of cases which come to appeal, both by warning them from taking a line which the Minister is unlikely to support, and by enabling them to see that applicants have all the relevant information where it seems unlikely that an appeal would have any chance of success.

The Selected Planning Appeals for 1958 is obtainable at H.M.S.O. price 2*s.* net.

House Purchase and Housing Act, 1959. This Act came into operation on 14 June and Circular 37/59 dated 11 June describes the provisions of the Act and a Memorandum attached to the Circular gives notes for guidance in respect of House Purchase, the New Scheme of Standard Grants and changes in the present Improvement Grant Scheme.

The Circular is obtainable at H.M.S.O., price 1*s.* 3*d.* net.

Housing (Underground Rooms) Act. This Act became law on 14 May 1959, and came into force one month later, and Circular 38/59 states that the purpose of this Act is to restore to local authorities the simple and quick means of closing unhealthy underground rooms previously provided by Section 12 (2) of the Housing Act, 1936 (now consolidated in Section 18 (2) of the Housing Act, 1957). In a Judgment of May 1957, the Court of Appeal took the view that as a result of the Housing Repairs and Rents Act, 1954, the exercise of these powers had become subject to the application of the general standards of unfitness

now to be found in Section 4 of the Housing Act, 1957. The regulations which local authorities had already made under Section 12 (2) (*b*) became, therefore, ineffectual.

The effect of the present Act is to restore the former position. Local authorities will again be able to make closing orders both under the formula now contained in Section 18 (2) (*a*) of the Housing Act, 1957, and also, in accordance with existing regulations, under Section 18 (2) (*b*). The Minister will also be prepared to consider any new regulations which authorities may wish to make. Before giving his consent he will, as in the past, ask them to advertise the draft regulations and allow opportunity for inspection and comment.

The existing model regulations have been revised to bring them into conformity with present day standards. Local authorities with regulations already approved are asked to obtain a copy of this revised model, to review their own regulations in the light of it and to submit revised regulations for the Minister's approval as soon as possible, and in any event not later than the end of the year. Copies of the model regulations may be obtained in England from the Ministry of Housing and Local Government, Whitehall, S.W.1, and in Wales and Monmouthshire from the Ministry of Housing and Local Government, Cathays Park, Cardiff.

While the Act and regulations are necessarily drawn in terms of prescribed standards, it is important that local authorities should ensure that they are applied with care and discretion. In determining whether a basement room which falls somewhat below the prescribed standards should be closed, it is relevant to consider the use to which the room is to be put. Should it be wanted, say, as a home workroom or a boxroom or for conversion into a bathroom it would be reasonable to take a more flexible view than if it were in regular use as a living room. Further, too strict an application of the standards may not always lead to equitable results. For example, a basement room with an open aspect facing the south or west may have better natural light than another room with a window complying with the minimum requirements, even though in the former case the window measurements may be rather less than the standard. The Minister looks to local authorities, in using their restored powers, to give due weight to these and similar considerations.

LONDON MASTER BUILDERS ASSOCIATION. Building Contracts——Correct Procedure for Execution. Experience indicates that many people concerned with the execution of building contracts are not clear about the correct procedure to be followed.

In many cases where a dispute has arisen, it has been found that the builder has not received a copy of the conditions of contract under which he is working. With this in mind, the following advice has been prepared in consultation with the Association's solicitors and members are strongly advised to ensure that it is followed in all cases.

The proper practice to be followed is for a building contract to be executed in duplicate and exchanged so that one part, signed by the building owner is retained by the builder. If the agreement is executed under hand only, each copy should have a 6d. adhesive stamp attached which should be cancelled on execution. This must be done within 14 days of the date of the Contract. If the agreement is under Seal, the original attracts a 10*s*. deed stamp and the duplicate a 5*s*. deed stamp which must be impressed in the appropriate place within 30 days of the date of the contract by the Inland Revenue Authorities. In addition, the duplicate should be denoted against the original and this means that both copies, stamped as above, are lodged with the Inland Revenue Authorities and compared. The duplicate is then impressed with a blue stamp indicating the duty paid on the original. It should perhaps be added that failure to stamp the document properly within 30 days of its date, could attract a considerable penalty.

This advice is in accordance with Practice Note 21 of the Joint Contracts Tribunal which is reproduced on pages 266 and 267 of the L.M.B.A. Handbook 1959, and in any case where an architect or client appears to be unwilling to follow the correct procedure, this Practice Note may of course be quoted. (Issued by the L.M.B.A. to its members. June 1959.)

LONDON COUNTY COUNCIL. London Building Acts, 1930–1939. Clean Air Act, 1956. London Building (Constructional) By-Laws, 1952. By-law 10.09 (Hearths in and before fireplace openings) of the London Building (Constructional) By-laws, 1952, requires, *inter alia*, that under every closed slow combustion domestic stove the constructional hearth shall be 6 in. thick of concrete, stone or other like incombustible material, extending not less than 6 in. beyond each side of the fireplace opening and 12 in. in front of the stove: provided that any extension of the hearth which is not directly under the stove, may be not less than 2 in. thick. Similarly, By-law 10.13 (Hearths under stoves not in fireplace openings) requires, *inter alia*, that a domestic closed stove not in a fireplace opening must stand upon a slab or hearth of concrete, stone or like incombustible material at least 6 in. thick, extending 12 in. beyond all sides of the appliance, or it may be of a material at least 2 in. thick if its resistance to the transmission of heat is not inferior to that of a slab of concrete 6 in. thick.

Although many types of closed stoves are now provided with doors which can be opened to expose the fire and are designed to burn economically under these conditions, the risk of the spread of fire by transmission of heat through the hearth is not so great with such a stove as with an ordinary open fire, as the hot ashes do not stand directly upon the hearth but are held within an ash tray which is raised above the hearth. Thus those portions of the hearth or slab beyond the front and sides of the appliance do not get unduly hot from the transmission of heat through the material of the hearth and the main purpose of such extensions of the hearth is to protect the floor against any hot material which may fall from the fire but which would rapidly cool.

The Council has indicated that it is prepared to grant waivers from the provisions of By-laws 10.09 and 10.13 so as to allow in connection with the installation of domestic closed or openable heating stoves wherein a receptacle for ash is provided, and is supported above the constructional hearth or slab:

(*a*) The extension of the hearth or slab to be 12 in. in front of the appliance and 6 in. from its back and sides or up to an adjacent wall or walls whichever is the lesser distance and

(*b*) any part of the hearth or slab which is not directly under the appliance to be:

(i) a fixed iron or steel plate not less than $\frac{1}{8}$ in. thickness bedded upon a layer of asbestos board not less than $\frac{3}{16}$ in. in thickness, or

(ii) of other non-combustible material to the satisfaction of the district surveyor.

This decision should facilitate the implementation of the Clean Air Act, 1956, in that the installation of closed or openable convector type stoves in lieu of existing coal grates, which project further into the room than does the ordinary open fire, will be possible without expensive works being carried out to the hearth in those cases where the projection results in non-compliance with the By-laws. (17 June 1959.)

Correspondence

WHERE DO WE GO FROM HERE ?

The Editor, R.I.B.A. Journal

Dear Sir,—On receiving the Gold Medal, Professor Mies van der Rohe said: 'I have been asked many times, where do we go from here? To those of us for whom architecture is the expression of an epoch, "Where do we go from here?" does not make sense. Architecture is the expression of the inner structure of our epoch and the slow unfolding of its soul.'

The important question for architects (and everyone else) therefore is not 'Where do we go from here in architecture and town-planning?' but 'Where do we go from here in the slow unfolding of the soul of our epoch?' The reply could be 'To a sudden and conclusive bang'. What the Professor's statement must logically imply is that we cannot go on discussing architecture and town-planning in realistic terms without discussing social objectives. Planning, which includes architecture, *is* politics whether you like it or not; it is therefore economics, therefore philosophy. Yet we go on pretending that we can create a better environment by blindly accepting

the inadequate, and potentially lethal, *status quo*. It is not enough to ease our consciences by putting on occasional shows of good intentions (based on false premises and invariably introduced by enormous portraits of that hideous new deity to brainwashed enslavement—the Common Man).

What should our social objectives be? State ownership of land? You could start building on comprehensive plans then. But for what purpose? Everybody says for Full Employment. Again for what purpose? To make what we want? But after the basic essentials, what *do* we want? More gadgets? Could they not be made anyway without all this dreary fuss, turmoil and dangerous warring for exports? Do we really need Full Employment in this ever-more-mechanised age?

Let us now assume that Full Enjoyment is a more reasonable aim. What of freedom, then, as an objective? I mean what about Leisure? You never have had, and never will have, an enjoyable, co-operative culture without it.

But start talking Leisure and you must talk about many other matters—especially about Money. That is not easy because our attitude towards both Work and Money is hardly rational (least of all among the experts of the Radcliffe Committee). 'Architecture is the expression of an epoch'. Our epoch is dominated by crazy ideas about Work and Money. The ghastly expression of those ideas are plain to see all around. Ours is the Workhouse State, the Great Labour Camp, in which, although manners may belie it, we are all slaves of one sort or another, chained in gangs by the Work and Money myths. Slaves do not make civilisations.

We must begin to discuss such realities. Thus we may find a way to build a more viable 'inner structure' from which fine outer structures, symbolising the 'soul of the epoch', may grow, not just here and there as rare signs of hope for the far-off future, but everywhere as hopes in process of fulfilment.

Yours faithfully,

ERIC DE MARÉ [*A*]

REGENT'S PARK TERRACES

Dear Sir,—I see in the May issue of the JOURNAL that the Crown Commissioners are interested in the views of architects concerning the restoration of the Nash Terraces in Regent's Park, as opposed to the demolition and replacement of the façades by exact replicas, with particular reference to York Terrace, where the latter course may effect a saving of some £90,000.

The final decision surely depends on the aims of the admirable plan for the preservation of this delightful backdrop to the park.

If they look upon these Terraces as on any 'original' art treasure, then there may be some argument for the preservation of the original façades.

But surely the object is to retain the general architectural effect achieved by Nash, for the enjoyment and edification of the present generation and of posterity.

Furthermore, the fact that the interiors have been or are being completely reconstructed, invalidates the 'original' art treasure argument, as it is illogical to separate the façades from the interiors, of which they were originally the logical expression.

Therefore the obvious course is to retain the 'effect' by whatever methods are most practicable in the circumstances.

I will end on a personal note as I have a very real love for these Nash Terraces which goes beyond my appreciation of their architectural merit, having been born at 7, Cambridge Terrace, where I lived for the first 14 years of my life.

My late parents used to tell me of the time when the park gates were locked at night, and only the carriages of the residents were allowed through to disturb the peace, and I still remember with amusement the mews where our cars used to stand behind the iron bars of the stables and the roar of the sea-lions which carried (and I hope still carries) so clearly from the Zoo!

The decision to retain the façades was excellent, but the methods used to achieve this must be the most suitable ones—geared to present-day structural and economic problems and not to an age which is past.

Yours faithfully,

A. B. GRANSBY [*A*]
Vancouver, B.C.

ANNUAL REPORT

Dear Sir,—I have just received the June 1959 copy of the JOURNAL and have read Mr. Kenneth Dalgliesh's letter of complaint about the format of the Annual Report. I hasten to disagree with this view.

For the first time in ten years, I think, I have read the report because it is so well and attractively presented. The type, the coloured paper, the arrangement, all go to make up a document which *looks* lively and interesting—whatever its contents! And is there any reason why we should not have a report as attractive as that of a rubber company or tea company.

Congratulations to all concerned in its production, and I know I voice the sentiments of a large number of professional colleagues in this Colony.

Yours faithfully,

J. R. FIRTH [*A*]
Hong Kong

EARLY INDUSTRIAL ARCHITECTURE

Sir,—There is something very pathetic about Mr. Harvey's admirable paper on industrial buildings of the last century published in the July JOURNAL. It seems to show a nostalgic desire to admire and preserve what is rapidly disappearing, the Victorian age; even the Bye-law houses of the 60's are included. Why is there this hopeless longing?

Is it that laymen at any rate are feeling that architecture as it has been known for the past 3,000 years has ceased to exist? Therefore every effort must be made to save what is left, even if it be the Coal Exchange in London or an old cotton mill in Rawtenstall.

Never before has the word architect assumed such portentous proportions. The R.I.B.A. has multiplied more than fourfold. Central and local governments have perfected a complete hierarchy of architectural titles—Chief Architects, Assistant Chief Architects, Superintending Architects, Senior Architects, Assistant Architects and even the humble draughtsman and tracer is designated an Architectural Assistant.

The sacred name itself is protected by the law and heavy penalties await anyone using it who is not 'registered' and 'chartered'. Incidentally what about Sir Ninian Comper who is neither? He surely belongs to the Middle Ages when there was beautiful architecture but no architects, rather than to the present, when there are beautiful architects but no architecture.

Yours faithfully,

P. M. ANDREWS [*F*]

REAR ELEVATION

Dear Sir,—The issue of the July number of the JOURNAL prompts me to make a mild protest as to the caption under the photograph on the cover. As an architectural term 'elevation' in my day meant a graphic representation on a vertical plane of any solid object drawn to scale in two dimensions only. It did not mean a physical part of a building and it did not mean a photograph.

On reading the words 'Stanley Mills, 1813, rear elevation' I am driven to the conclusion that the Royal Institute will content itself nowadays with the jargon of a second-rate estate agent.

I quite expect to be told that the use, or misuse, of the term is now 'tolerated'—but if so the questions remain:—First, what other term is now used in place of the old term 'elevation' to express its former proper meaning? Second, in what way is your caption better than 'the back of Stanley Mills' or, if you like 'Stanley Mills—a photograph of the back wall'? Third, do 'plan' and 'section' still mean the same thing, or has the present generation found some better use for them?

Yours faithfully,

HENLEY CORNFORD [*A*]

ARCHITECTURAL EDUCATION

Dear Sir,—May I add a word in support of C. G. Percy, whose letter regarding the recently advertised intentions of the Board of Architectural Education appeared in the July JOURNAL.

The Board have been steadily strangling the practical side of the profession for the last 20 years.

It has always been more difficult for a poor but intelligent entrant to become an Associate by the external examination, and a well-known fact that those who are less fitted for the profession can only become Associates if daddy can afford it and they go to a school. I hope the ex-schoolboys won't misread that statement (!) but if they want

to put it to the test, let the schools all agree to their pupils taking the same external examinations.

Meanwhile I suggest the new requirement regarding Advanced Level G.C.E. is stupid and should be rescinded at the earliest opportunity. Whilst on this subject it should be added that the present day testimony requirements are much less practical than those of 25 years ago. They seem to be designed to waste time rather than teach architecture, and the inevitable result will be that the backbone of good sound assistants in the private office will eventually disappear.

Yours faithfully

E. B. REDFERN [*A*]

Book Reviews

Philosophy of Structures, by *Eduardo Torroja*. English version by J. J. and Milos Polivka. 10¼ in. 366 pp. incl. illus. University of California Press and Cambridge University Press. 1958. £4 14*s*.

The dazzle of spectacular structures rising under the hands of Nervi and Candela at the present time may easily detract from the very considerable achievements of Eduardo Torroja, whose native country, Spain, has offered comparatively few architectural opportunities in the years since the Civil War. A man of international reputation, who for the last 30 years has guided reinforced concrete design from the pioneer days of Ribera and Zafra to its present position as a highly developed science, he has the ability of writing in a most readable manner.

Torroja is a great visionary despite his years, or perhaps because of them, and possesses at the same time a dynamic technical initiative, insisting that 'the best way to overcome a problem is to remove it'. His book is really a series of collected thoughts and reflections, each authenticated by patient experience and observation; yet retaining all their original enthusiasm. It is the sort of book too which is written 'later on' in life and might aptly have been entitled 'In the Nature of Materials', had not Frank Lloyd Wright, who had a great regard for him incidentally, used this phrase some 20 years earlier.

Like some of his great contemporaries, Torroja designs intuitively, leaving mathematics to confirm his findings where this is necessary or possible. Perhaps the most striking impression he conveys is his uncanny ability to understand the inherent qualities of the materials he handles so fluently and with such sympathy.

The book is written in very simple terms and the chapters are kept to a 'readable' length, an unusual virtue in a technical book, being admirably supported by a good typographical layout. About three-quarters of the text is concerned with the quality and nature of materials and their relation to their parent structural forms, whilst the closing chapters are devoted to Torroja's more personal philosophy. Liberally illustrated, it is particularly interesting to see, in their personal context, details of such structures as the Zarzuela grandstands, the Market Hall at Algeciras and the Frontón Recoletos in Madrid, which set the seal on his international fame.

J. A. WELLS-THORPE [*A*]

Palladian and other Venetian Villas, by *Giuseppe Mazzotti*. 12½ in. 415 pp. incl. illus. Indices. Bibliog. Tiranti. 1958. £6 15*s*.

The R.I.B.A. exhibition of Palladian and other villas of the Veneto held in 1954 was a memorable one. Dr. Giuseppe Mazzotti, who was responsible for creating it and personally supervising its presentation on that occasion, has gathered the material together in this handsome volume. The fact that the English is not always very good seems of minor importance by comparison with the beauty of the photographs of the villas which enrich the countryside in this region. Some of these with their superb murals and sculpture, such as the Villa Barbaro at Maser and La Malcontenta on the Brenta, have remained in or come into the possession of those able to preserve them in good state. Too many others, however, have fallen into a condition of sad neglect. Dr. Mazzotti has done valuable work in focusing attention on a problem of preservation which must be of general concern.

R. E. E.

Architectural History (*Journal of the Society of Architectural Historians of Great Britain*), Vol. 1. 9½ in. 94 pp. incl. illus. York. 1958. Available to subscribers to the Society.

The Society of Architectural Historians of Great Britain has now been in existence for well over a year, and has celebrated this event with the appearance of Volume I of its annual journal. The aim of the Society is to provide 'a forum for the discussion and dissemination of ideas related to the history of architecture'. Verbally, these aims are achieved at the annual general meeting (and it is to be hoped at local centres) and textually under the auspices of this journal. Considering the age of the Society, the publication is a considerable achievement, with 94 pages and about 50 photo and line illustrations. The printers are the King's College Printing Section of the University of Durham, Newcastle upon Tyne, who deserve congratulation, although one fears that the method of reproduction is not entirely satisfactory for architectural designs. In this first number the emphasis is upon the 19th century, with contributions by Howard Colvin on Stafford House, John Brandon Jones on Smeaton Manor, and Michael Port on Francis Goodwin. The level of scholarship is high. Architectural history now has at last a publication of its own and space should not be wasted upon contributions that can find a market in less specialised fields. One must applaud all those concerned in producing this journal, look forward to the next number, and wish it success in the future.

J. H.

Neuer Wohnbau. Band II. Edited by *Hermann Wandersleb*. 11¼ in. 272 pp. incl. illus. Ravensburg: Otto Maier. 1958. Dm. 28.

Dr. Hermann Wandersleb, who captains the team of 30 experts contributing to this remarkably informative book—they include (the late) Otto Bartning and Hans Bernhard Reichow—is State Secretary to the Ministry of Housing in Western Germany. In 1952, he performed a similar function for Volume 1, which dealt chiefly with the housing competitions sponsored by E.C.A. (Economic Cooperation Administration), the principal initial influence in post-war home building in the Federal Republic.

Volume 2 looks back on the practical results of these first experimental schemes and surveys, from widely differing standpoints and with the most searching penetration, the whole field of West German, government-directed, domestic reconstruction from E.C.A. to Interbau. Every aspect of housing, physical, psychological, social, is recorded, including a comparative study of costs, and there is no glossing over failures or mistakes, whether of construction or of planning. One can only envy those Germans who are, in some capacity, professionally concerned with housing, for they have this book, packed with up-to-date data, to help them. Indeed, as the publishers have every apparent right to claim, it is unthinkable that they could do without it. Their British counterparts are less fortunate!

Neuer Wohnbau in Finnland, by *Hans J. Becker* and *Wolfram Schlote*. 10¾ in. 120 pp. incl. illus. Stuttgart: Krämer. 1958. DM. 19.80.

Two young German architects, who clearly made constructive use of their time in Finland as exchange students at the Technical High School at Helsinki, are responsible for this useful, and up-to-date, study of recent Finnish housing. The principal national and regional programmes and new town schemes are described, while over 50 groups of buildings are analysed with plans and photographs. The captions to the illustrations are translated into English and French, and there is a summary of the contents of the book in a well-meaning, but rather confusing, version of our tongue. Good value.

Neue Gärten, by *Otto Valentien*. 10½ in. 136 pp. incl. illus. Index. Ravensburg: Otto Maier. 1957. DM. 30.

This is an entirely new edition of an attractive book first published in 1949, only the title of the original work being retained. In it a well-known German landscape architect describes and illustrates, with excellent photographs and plans, 24 small gardens of his own design. These have been selected for the variety of site conditions which they ingeniously exploit.

J. C. P.

Notes and Notices

NOTICES

Cessation of Membership. Under the terms of Bye-law 21 the following have ceased to be members of the Royal Institute: *as Fellows*—Alfred Edward Beswick, Douglas Louis Dick, Thomas Duffy, Herbert Langman; *as Associates*—Vasant Purushottam Barve, Jacob Ben-Attar, George Henry Bray, John Richard Burfield, Leslie Claude Chidley, Douglas Charles Clayton, George Djurkovic, Patrick Joseph Doran, Stanley Hanson Dutton, Alan James Elliott, Charles Robertson Gallie, Roger Francis Gildersleeve, James Henry Greenwood, Sidney Constantin Halbritter, Leslie John Pyke Halstead, Thomas Cressey Hamilton, Antony Victor Harwood, James Donald Hayton, Ralph Malcolm Hudson, Gwynne David Lewys Hughes, Patrick Alan Latham Hughes, Maurice Hurst, Iain Walker Inglis, Charles Henry Jackson, Norman William Langford Johnson, David Anthony Lewis Jones, Tom Leonard Jones, Ian Stewart Kaye, Colm Paul Kelly, Jack Hughes Longstaff, Angus Lewis MacIver, Silvanus Perren Maycock, John Morrice, Peter Ogden, Vincent Hilary O'Neill, William James Reith, Walter Scott, Douglas Rogers Stark, Alexander Richard Sykes, Justin David Tallon, Percy Taylor, Cedric Scott Thomas, Robert Thomson (17768), Harold Tiktin, Louis Rigola Volonterio, William Michael Ward, Kenneth Newman White, Martin C. Wilkinson, Cyril Gordon Williams, Allan Haigh Wood, Cyril Woodgate, Kenneth Frank Charles Woolley, Benjamin Valentine Ingram Yellowlees; *as Licentiates*—Allan Seymour Clayton, Donald George William Cloke, Stanley Clifford Gunning, Andrew Wilson Kneale, Roland Look, Harold Kingston Lord, William McLean, John Graham Matthews, Alfred Mawson Millwood, Eric Prince, Wilfred Eberhardt Schumm, Frederic Leslie Vicary.

The R.I.B.A. Appointments Department. Members and Students of the R.I.B.A. and the Allied Societies are reminded that the services of the Institute's Appointments Department are available to employers requiring assistants and to assistants seeking salaried employment.

Employers are invited to notify the Secretary of vacancies in their offices, giving details of the work to be done, the qualifications required and salaries offered.

Assistants should preferably call at the offices of the Appointments Department, but if this is not practicable they should obtain from the Secretary an application form, which when completed and returned to the Institute will enable the Department either to send the applicants particulars of vacancies suitable to their qualifications and requirements or submit their names for vacant posts.

Members and Students seeking official appointments should note that normally these are fully advertised in the weekly professional press, and that therefore the Appointments Department do not as a rule notify them to those on the register.

The Institute will also be glad to advise on most matters concerning architectural employment, including overseas appointments.

New Building Materials and Preparations. The attention of members is drawn to the fact that information in the records of the Building Research Station, Garston, Watford, Herts, is freely available to any member of the architectural profession, and architects would be well advised, when considering the use of new materials and preparations of which they have had no previous experience, to apply to the Director for any information he can impart regarding their properties and application.

BOARD OF ARCHITECTURAL EDUCATION

R.I.B.A. Maintenance Scholarships in Architecture. The following R.I.B.A. Maintenance Scholarships have been awarded for the year 1959–60: An R.I.B.A. Houston Maintenance Scholarship of £125 per annum to Mr. David Price of Stone, Staffordshire. An R.I.B.A. Houston Maintenance Scholarship of £125 per annum to Mr. A. G. A. Spicer of London. An R.I.B.A. Howe Green 4th and 5th Year Maintenance Scholarship of £40 to Mr. P. A. Madden of Birmingham. An R.I.B.A. Hartley Hogarth Maintenance Scholarship of £31 10*s.* per annum to Miss Margaret Hall of Keighley, Yorkshire. THE BUILDER Maintenance Scholarship of £75 per annum to Mr. William Evans of Birmingham.

The Maintenance Scholarships previously awarded to the following candidates have been renewed: Mr. H. M. Cummings (School of Architecture, University of Manchester—R.I.B.A. Houston Maintenance Scholarship of £125 per annum). Mr. W. G. Marden (Architectural Association, School of Architecture—R.I.B.A. Houston Maintenance Scholarship of £125 per annum). Mr. D. G. Williams (Birmingham School of Architecture—R.I.B.A. Houston Maintenance Scholarship of £125 per annum). Mr. Nicholas Wood (Cambridge University School of Architecture—R.I.B.A. Houston Maintenance Scholarship of £125 per annum). Mr. D. S. Cartwright (Architectural Association, School of Architecture—the Ralph Knott Memorial Maintenance Scholarship of £45 per annum). Mr. Royston Summers (Architectural Association, School of Architecture—R.I.B.A. 4th and 5th Year Maintenance Scholarship of £60 per annum).

R.I.B.A. Final Examination. June 1959. The Final Examination was held in London, Leeds, Manchester, Newcastle, Edinburgh and Belfast from 24 June to 3 July 1959. Of the 334 candidates examined, 162 passed as follows:

Passed Whole Examination:	112
Passed Whole Examination subject to approval of Thesis:	1
Passed Part 1 only:	49
	162

172 Candidates were relegated.

The successful candidates are as follows:

Whole Examination

Agyeman: O. T.
Allen: H. E.
Bailey: D. W.
Barber: R. A.
Barnes: F. J. E. C.
Beales: Colin
Bentham: Neil
Berney: Keith
Berry: T. B.
Blades: B. F.
Braddock: M. I.
Bray: E. J.
Bruce: J. F.
Burn: J. U. B.
Buss: R. M.
Cameron: Duncan
Chaffer: Mrs. H. G.
Chamberlain: Alan
Chapman: J. R. N.*
Cherrill: J. O.
Cheung: Sing-Hoi
Child: Ronald (Distinction in Thesis)
Collier: James
Cook: W. V.
Cossins: J. S.
Cox: J. M. (Distinction in Thesis)
Crawford: Archibald
Crawley: P. J.
Crummett: P. A.
Cunning: J. L.
Czeremski: Antoni
Day: L. A.
Deans: John
Denning: N. E.
Deuchars: John (Distinction in Thesis)
Dixon: M. E.
Dodds: A. J.
Donnell: D. N.
Douglas: A. G.
Duckworth: T. R.
Earwaker: Jack
Erridge: J. D.
Freeman: Miss G. M.
Frost: K. J.
Galberg: George
Goldsmith: J. W.
Gooch: James
Grantham: G. F.
Grimshaw: A. J.
Grinyer: D. T.
Hall: John
Hall: John Brian
Harvey: G. P.
Heasman: Albert
Heyer: P. O.
Hitch: W. A.
Hodgson: J. D. W.
Horne: D. D. G.
Howard: M. L.
Howitt: D. A.
Huke: R. A.
Jack: M. D.
Jackman: C. B.
Jeffers: B. P.
Jenner: Michael
Jofriet: Mrs. M. J.
Jones: Martin M.
Kaikini: P. L.
Lewis: G. L. R. (Distinction in Thesis)
Lord: Roger
Lovatt: John
Maggs: J. K.
March: R. J.
Mather: R. W.
Mawson: P. O.
Mercer: A. F.
Nowicki: Leszek
O'Connor: Miss Eileen
Orrell-Jones: Michael
Owen: J. H. L.
Patterson: I. R.
Perkins: Arthur
Pitcher: Peter
Pope: L. R.
Portbury: A. F.
Pradhan: A. V.
Revill: G. L.
Roberts: W. G.
Robson-Smith: R. W.
Rounsley: A. C.
Salkild: M. F. C.
Sanders: Ian
Saunders: P. H.
Sellors: G. W.
Shepherd: J. A.
Smallbone: Miss M. A.
Smalley: Peter
Smith: Lawrence L.
Smith: Peter B.
Snow: T. C.
Stuart: M. G.
Swanson: James
Torrance: I. M.
Trussler: D. J.
Tulip: James
Tyler: C. J.
Wall: Trevor
Wallis: A. V.
Walters: G. F.
Ward: Ian
Wili: B. M.
Wilkins: John
Yeo: Miss A. Y. S.

* *Subject to approval of Thesis.*

List of Successful Candidates who sat for Part 1 only

Altmann: F. R.
Best: A. J.
Briggs: C. A.
Burley: R. C.
Champion: E. F. J.
Choyce: G. A.
Coombes: A. F.
Cooper: M. J.
Craston: D. M.
Davies: J. R.
Deacon: T. B.
Deighton: G. K. T.
Ede: A. J.
Ellis: G. W.
Forbes: J. M.
Gaskell: B. J.
Geden: R. A.
Greenhalgh: Roy
Hall: R. D.
Hopkins: C. M.
Hunter: James
Kay: Bryan
Lawes: D. S.
Lewis: G. R. C.
Lobb: R. E.
Moody: D. G. A.
Morris: T. G.
Nellis: Philip
Nicholls: A. D.
Palmer: J. H.
Powis: F. J.
Prosser: T. W.
Quilter: E. C.
Rylatt: C. J.
Sharman: A. E.
Sibley: F. G.
Smith: Dennis A.
Steele: Miss A. J.
Stuckey: R. B.
Taylor: E. J. F.
Taylor: N. A.
Turnbull: J. K.
Wager: S. J.
Wass: D. R.
Wenning: Miss M. J.
Whittaker: Donald
Williams: Leon
Wilson: W. R.
Witney: M. C.

R.I.B.A. Special Final Examination, June 1959. The Special Final Examination was held in

London, Leeds, Manchester, Newcastle, Edinburgh and Belfast from 24 June to 3 July 1959. Of the 197 candidates examined, 64 passed as follows:

Passed whole examination:	54
Passed Part 1 only:	10
	64

133 candidates were relegated.

The successful candidates are as follows:

Whole Examination

Adkins: A. J.
Andrews: B. R.
Barber: C. E.
Barnes: G. A.
Bate: J. D.
Baxter: R. W.
Bound: P. J.
Bousfield: E. J.
Brown: W. B.
Campbell: M. F.
Chew: T. W.
Clancy: C. A.
Cohen: Benjamin
Comley: E. T. P.
Cooke: J. V.
Cull: N. F.
Edwards: Emyr
Evans: A. J. A.
Galvin: P. J.
Guy: Richard
Haddow: T. H.
Holmes: Eric
Huyton: G. E. A.
Jarvis: G. F. S.
Kendall: E. J. H.
Kin Men: Wong
Ladbrooke: W. M.
Marriott: Philip
Mead: L. C.
Memess: C. A.
Mills: J. P.
Mlodnicki: A. A. Corvin
Noller: J. E.
O'Dell: D. L. W.
Papacostas: Pieris
Parker: K. W.
Pooley: N. G.
Reczelewski: Edward
Revels: S. M.
Rolls: K. W.
Russen: P. W.
Smith: John D. V.
Stanton: F. H.
Sukumaran: K. G.
Taylor: A. S.
Tupman: R. C.
Turner: L. W.
Turton: J. F.
Van Mol: G. A. J.
Warburton: Derek
Williams: T. C.
Wilson: P. M.
Wood: B. W.
Wood. E. H.

List of Successful Candidates who sat for Part 1 only

Brown: Geoffrey
Hall: Rowland
Harvey: F. M.
Hurst: R. W.
Redstall: D. W. E.
Richardson: P. S. W.
Robinson: H. S. L.
Soye: W. A.
Terry: F. E.
Wilkinson: D. A.

COMPETITIONS

Design of Shopping Centre and Adjacent Houses, Grangemouth. The Burgh of Grangemouth are to hold a competition for the development of a five-acre site with Shops, Community facilities, Dwellings, Parking, Garages, Communications and spaces.

Assessor: Mr George Grenfell Baines, M.T.P.I. [*F*].

This advance notice is made to save time in the issue of conditions which it is hoped will be ready by 17 October. Designs are to be submitted three months later. The conditions will call for the minimum amount of work in the preparation of designs.

Application for the conditions must be made before 5 November 1959, to W. Bryce Johnston, Esq., J.P., M.A., LL.B., S.S.C., Town Clerk, Burgh of Grangemouth, Municipal Chambers, Grangemouth, Stirlingshire. Deposit £2 2*s*. An applicant for the conditions must state his registration number.

Full particulars of the following were published in the JOURNAL for July, page 329:—

Civic Centre, Corby. Last day for submitting designs: noon, 21 December 1959.

County Offices, Taunton. Last day for questions: 22 September 1959. Last day for submitting designs: 5.30 p.m. on 15 February 1960.

Zinc Eaves Gutters. Last day for submitting designs: noon, 30 September 1959.

ALLIED SOCIETIES

Changes of Officers and Addresses

Berks Society of Architects. Chairman, E. A. Ferriby, B.Arch., A.M.T.P.I. [*A*].

Burnley District Society of Architects. President, John Taylor [*F*].

East Anglian Society of Architects. President, A. W. Ecclestone [*L*]. Joint Hon. Secretary, A. E. Wallis [*A*], 72 Elmhurst Drive, Ipswich, Suffolk. Mr. Wallis is also Hon. Secretary of the Suffolk Association of Architects.

Edinburgh Architectural Association. President, G. H. Lawrence, T.D., A.M.T.P.I. [*A*].

Essex, Cambridge and Hertfordshire Society of Architects. Cambridge Chapter. Chairman, W. R. Hazlewood, A.M.T.P.I. [*A*].

Norfolk and Norwich Association of Architects. President, A. W. Ecclestone [*L*].

Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects. Northamptonshire Branch. Chairman, James M. I. Scott [*A*]. Hon. Secretary, Mrs. J. E. Butlin [*Student*], 136 Northampton Road, Kettering (Kettering 4371).

South Eastern Society of Architects. Brighton District Chapter. Chairman, F. E. Green [*A*]. *Canterbury District Chapter.* Hon. Secretary, R. G. Tulley [*A*], Pegwell Plat, 28 Pegwell Avenue, Ramsgate, Kent. *Kingston-on-Thames District Chapter.* Chairman, S. W. Harris [*L*]. *Maidstone Chapter.* Chairman, L. H. McDermott, T.D. [*F*]. *Tunbridge Wells District Chapter.* Chairman, F. R. Pite [*F*]. Hon. Secretary, A. P. Cooksey [*A*], 19 Garrick Street, London, W.C.2.

South Wales Institute of Architects. President, Lewis John, M.A., B.Arch. [*F*]. *Central (Cardiff) Branch.* Chairman, William G. Wilson [*A*]. (Mr. Wilson is still Hon. Secretary of the S.W.I.A.). Hon. Secretary, C. F. Fox [*A*], 'Aldbury', Bryngwyn Road, Cyncoed, Cardiff.

West Yorkshire Society of Architects, Bradford Branch. Chairman, Kenneth Warman [*A*]. Hon. Secretary, W. D. Walker [*A*], South Mead, Station Road, Baildon, Yorks.

York and East Yorkshire Architectural Society. Hull and District Chapter. Hon. Secretary, Peter D. Gordon, Lyndon, 368 Kingston Road, Willerby, near Hull, E. Yorks.

Orange Free State Provincial Institute of Architects. Hon. Secretary, Paul Bonnici, 221–2 Permanent Building, Maitland Street, Bloemfontein, O.F.S., South Africa.

East Africa Institute of Architects. Kenya Chapter. Chairman, S. C. Lock [*A*]. Hon. Secretary, John Pickering [*A*], c/o P.O. Box 890, Kenwood House, Nairobi, Kenya, East Africa. *Uganda Chapter.* Chairman, A. W. G. Inglis [*A*].

Institute of Southern Rhodesian Architects. Hon. Secretary, J. A. R. Wilson [*A*], P.O. Box 3592, Salisbury, S. Rhodesia.

Royal Australian Institute of Architects. President, Kenneth Charles Duncan [*F*]. Hon. Secretary, Professor H. Ingham Ashworth, M.A.(Arch.) [*F*], Faculty of Architecture, University of Sydney, Sydney, N.S.W., Australia. The Secretary remains R. S. Greig, London Assurance House, 16–20 Bridge Street, Sydney, N.S.W., Australia.

Institute of Architects of Malaya. President, J. W. Ferrie [*A*]. Hon. Secretary, I. H. Gibbs [*A*], c/o Singapore Improvement Trust, Upper Pickering Street, Singapore 1.

Suffolk Association of Architects. Annual Exhibition. A most successful exhibition was held at the School of Art, High Street, Ipswich, from 7 to 11 July. It was opened by the Mayor of Ipswich on 6 July in the presence of some 60 members and guests. Among the guests were the Bishop of St. Edmundsbury and Ipswich, the Rt. Reverend A. H. Morris, the Vice-Chairman of the East Suffolk County Council, Mr. T. M. Bland, the Town Clerk of Ipswich, Mr. J. C. Nelson, the Borough Surveyor of Ipswich, Mr. J. B. Storey, the Principal of Ipswich Civic College, Mr. F. Metcalfe, and the Principal of the School of Art, Ipswich, Mr. E. Mayer.

The exhibition consisted of members' current work, local students' work, students' R.I.B.A. prize drawings, and illustrations of the Norwich Magdalen Street project carried out by the citizens of Norwich in collaboration with the Civic Trust.

The President, Mr. Murray Hare [*A*], in a brief speech welcomed the Mayor and explained the exhibition. The Mayor responded and declared the exhibition open, and Mr. Peter Barefoot [*A*] thanked the Mayor on behalf of the Association. The President then referred to the ten years' service of Mr. L. J. Grigg [*A*], who had recently resigned as Hon. Secretary of the Association, and asked the Mayor to present him with a cheque as a token of appreciation from members of the Association. Mr. Grigg responded. The Mayoress then presented the prizes and, following the serving of teas, members and guests toured the exhibition and Mr. Barefoot gave a criticism of students' work.

GENERAL NOTES

Manufacturers' Trade and Technical Literature Competition 1959. In view of the delays resulting from the recent printing dispute the organisers have decided that the last day for receiving entries shall be put back until 31 December 1959.

A.R.C.U.K. Maintenance Scholarships for Special Studies in Architecture. The Architects Registration Council of the United Kingdom will provide Scholarships and Maintenance Grants to selected students in architecture of British nationality who have yet, in order to complete their qualification for registration, to take their examination in Professional Practice and Practical Experience, having passed in all other sections of their final examination, and whose means appear to the Council to be insufficient to pursue special and approved studies in architecture.

Grants will be available only for subjects definitely related to the syllabuses of the various final examinations qualifying for registration under the Acts. Candidates must submit their programmes of study in detail. In the case of a candidate at one of the schools of architecture whose final examination is recognised under the Acts, the programme of studies must be countersigned as approved by the head of the school of architecture. In the case of a candidate qualifying by means of the R.I.B.A. Final or Special Final examinations, the programme of studies must be countersigned by a registered architect. Grants will be tenable at an approved teaching or research institution.

A grant may consist of up to £800, with in addition approved fees, normally for one year renewable for a second year on the submission and approval of another application.

In the first instance applications in accordance with the above regulations must be submitted to the Architects Registration Council of the United Kingdom, 68 Portland Place, London, W.1., by 1 September 1960, and thereafter on

1 September annually, so long as this scheme shall be in operation.

A.A. School of Architecture. Department of Tropical Architecture. Lectures on all aspects of architecture, housing and planning in the tropics will be given in connection with the postgraduate course on Tropical Architecture at 5 p.m. on Mondays, Wednesdays and Fridays beginning 5 October 1959. The lectures are open to architects, engineers and others interested in the rapidly developing countries of the tropics. Fees for the full series of lectures lasting two terms will be £25.

There are also a few vacancies left for qualified architects who wish to attend the full-time course on Tropical Architecture. Lecture programmes and other information can be obtained from the Tropical Department, 36 Bedford Square, London, W.C.1.

Toronto University School of Architecture. Graduate Assistantships in Architecture. The School of Architecture, University of Toronto, is making available to suitably qualified candidates two Graduate Assistantships to the value of $2,500 each for the session 1959–60.

Candidates should possess a degree in architecture of an approved university and, in addition to reading for the degree of Master of Architecture, must be prepared to give such assistance in the School of Architecture as may be required by the Director. In the first instance applications in triplicate, including a *curriculum vitae* and brief outline of the proposed subject of research, should be submitted on or before 21 September 1959 to Dr. Thomas Howarth, Director of the School of Architecture, University of Toronto, Toronto, Ontario, Canada.

American Museum in Britain. Mr. Ian McCallum, A.A.Dipl. [*A*], Executive Editor of the ARCHITECTURAL REVIEW, has been appointed Director of the first American Museum in Europe, now being established at Claverton on the edge of the City of Bath.

Mr. McCallum is a member of the Plans Committee of the National Trust, of the Managing Committee of the Institute of Contemporary Arts, and of the Executive Committee of the Georgian Group. He has visited the U.S.A. a number of times, twice in the capacity of Visiting Critic in the Department of Architecture, Yale University, and has subsequently written, broadcast and lectured on his impressions of U.S. architecture. In his position as Director of the American Museum he will continue to pay regular visits to the U.S.A.

The collection in the museum will illustrate the development of the American Decorative Arts from the 17th to the 19th century, in the form of complete rooms accurately furnished and equipped to give the European visitor a clear and comprehensive picture of the background to American domestic life through these centuries.

In addition to the series of period rooms there will be separate displays of folk art and of primitive painting and sculpture. Each year there will be lectures, seminars and special exhibitions devoted to one or other aspect of American architecture, painting, sculpture and the decorative arts, and a working library of books, photographs and slides is being assembled to further research.

The museum, which will open in the summer of 1961, is intended to be a live centre for the general visitor as well as the student and it is aimed to bring the permanent collection gradually up to date to contribute not only to a knowledge of America's past in the decorative arts but also to an understanding of its living present.

Claverton Manor (designed by Sir Jeffrey Wyatville) was chosen by the Halycon Foundation of New York which has donated funds for the purchase of the building, its basic collection, maintenance and staff, with this in mind. The house stands in 50 acres of park on Claverton Down overlooking the valley of the River Avon.

Notes from the Minutes of the Council

MEETING HELD ON 7 JULY 1959

Appointment of R.I.B.A. Representatives

(*a*) *B.S.I. Committees.* (*i*) *B*/96/1 *Kitchen Planning and B*/96/2 *Sizes of Domestic Appliances.* O. C. F. Carey [*A*] and H. H. Clark [*F*]*. (*ii*) *B*/19 *Schedule of Weights of Building Materials.* D. Winston Aldred [*F*]. (*iii*) *Code of Practice for Care and Maintenance of Floor Surfaces.* J. H. Mayer [*L*].

(*b*) *Ministry of Works Building and Civil Engineering Regional Joint Committees: Newcastle Committee* (*3-year term of office from* 1.2.57). John Gray [*A*] in place of Professor J. H. Napper [*F*], resigned.

(*c*) *Institution of Electrical Engineers: Panel for the Formulation and Publication of Recommendations of Good Practice for the adequate Wiring of Buildings.* Eric G. Cole [*A*].

The late W. H. Ansell [*F*]: **Bequest to the R.I.B.A.** Under the will of the late W. H. Ansell [*F*] his collection of drawings has been bequeathed to the Institute and has been handed to the Library.

In addition his portrait, painted by Sir Walter Russell, has been left to the Institute. There is already a Presidential portrait of him in the Institute's possession painted by T. C. Dugdale and the Council have agreed to the request of his partner, Mr. Arthur Bailey [*F*], that the Russell portrait might be left in his office on permanent loan.

Town Planning Institute: Grant of Royal Charter. The congratulations of the Council were sent to the Town Planning Institute whose grant of a Royal Charter has been approved by Her Majesty the Queen.

Membership. The following members were elected: as Hon. Corresponding Members (9); as Fellow (1); as Associates (175).

Students. 144 Probationers were elected as Students.

Applications for Election. Applications for election were approved as follows: *Election 6 October* 1959*:* as Hon. Corresponding Members (2); as Fellows (7); as Associates (56). *Election 3 November* 1959 (*Overseas Candidates*) as Associates (11).

Applications for Reinstatement. The following applications have been approved: as Fellow: Frank Dowdeswell [*Retd.F*]; as Associates: James Deas, Herbert Victor Maddox, Horace Reginald Parkin.

Resignations. The following resignations were accepted with regret: Roy Ernest Keith Bance [*A*], Robert Blain [*A*], Mrs. Judith Bottomley [*A*], Mrs. Alison Cecilia Brown [*A*], Mrs. June Denise Holroyd [*A*], Christopher Nicholson [*A*], Mrs. Barbara Jean Potter [*A*], Mrs. Roma Austral Smith [*A*], Raymond Banks Thorpe [*A*], Miss Shirley Barbara Trasler [*A*], Robert Edwin Hastewell [*Retd.A*], Robert Anthony Cutlar [*L*], Richard Arthur Peters [*L*], Frederick Charles Wylde [*Retd.L*].

Applications for Transfer to Retired Members' Class under Bye-Law 15. The following applications were approved: as Retired Fellow: Ganesh Bhikaji Deolalikar; as Retired Associate: Robert Gerrard Forbes; as Retired Licentiates: Ivor Samuel Davies, James Massey, Albert William Nye.

Obituary. The Secretary reported with regret the death of the following members: Charles Gustave Agate [*F*], Harry Stuart Goodhart-Rendel, C.B.E., Mus.B.(Cantab.), M.A.(Oxon) [*F*], Frederick James Maynard [*F*], James Donald Ferguson [*A*], Walter Brand (*Retd.A*], John Oscar Cheadle [*Retd. A*], Frank John Toop [*Retd. A*], Harold Marsh [*L*], Herbert Leslie Smith [*L*].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

* Mr. Clark is also the R.I.B.A. representative on the B.S.I. Committee for the revision of C.P. 304 SOIL AND WASTE PIPES and C.P. 305 SANITARY APPLIANCES. We regret that his initials were wrongly printed as M. M. in the NOTES FROM THE MINUTES in the July JOURNAL.

R.I.B.A. Library Group. Annual General Meeting. At the Group's annual general meeting on 6 July the following re-elections took place: Chairman, R. E. Enthoven [*F*], Hon. Secretary, Kenneth S. Mills [*A*], and Hon. Treasurer, W. H. Allen [*A*].

R.I.B.A. Cricket Club.

R.I.B.A. v. *A.A. at Elstree*, 10 *June*. The match resulted in a win for the R.I.B.A. by 58 runs. The scores were: R.I.B.A. 178 for 6 declared (R. Case 32, P. Aldis 63 n.o.) and for the A.A. 120 (P. Johnson 32, B. Spooner 56 and J. G. Batty 4 for 52).

R.I.B.A. v. *Blue Circle at Bromley*, 8 *July*. The match was drawn. The Blue Circle made 244 for 3 declared (A. R. Day 128 n.o., H. G. Paddison 53, and K. Hulme 51), and the R.I.B.A. made 174 for 7 (W. Spooner 50, J. G. Batty 38).

R.I.B.A. v. *R.I.C.S. at Cheam*, 22 *July*. The R.I.B.A. won by 6 wickets, the R.I.C.S. making 250 for 6 declared (B. Lindsay 88, C. Burrell 41, W. Spooner 3 for 59) and the R.I.B.A. 252 for 4 (P. Johnson 129 n.o., G. Fyson 50).

Obituaries

Joseph Edwin Barton, M.A.(Oxon.), [*Hon.A*], died on 6 June 1959, aged 83.

Mr. Barton, who was an outstanding classical scholar and had a wide reputation as a speaker, writer, broadcaster and lecturer, was headmaster of Bristol Grammar School from 1916 until his retirement in 1938.

Among his publications were an Introduction to Dening's *Eighteenth-Century Architecture of Bristol*; 'Modern Art', a B.B.C. booklet based on his Broadcast symposium on 'The Changing World'; and *Purpose and Admiration*, a lay study of the visual arts.

He was made an Honorary Associate in 1938.

Paul John James Panter [*F*] died on 3 April 1959, aged 70.

Mr. Panter was a pupil of Mr. Walter Talbot Brown [*F*] of Wellingborough, and was taken into partnership in the firm of Talbot Brown and Fisher in 1932. Ten years later he went into partnership with Mr. C. R. Crumpton [*L*] and his son, Mr. P. J. H. Panter, T.D. [*A*], as Talbot Brown, Panter and Partners. Since 1953

he had been in partnership with his son, who is continuing the practice.

Mr. Panter's principal works were numerous schools for the Hertfordshire County Council and Edmonton Education Committees, among others; Wellingborough Grammar School—part of Wellingborough School; industrial buildings, including the main offices and works of Messrs. H. W. Chapman Ltd., Wellingborough; several cinemas; private and parsonage houses; the churches of St. Barnabas and St. Andrew's, Wellingborough; and offices, bank premises and the repair of churches and other ancient buildings.

Mr. Panter was Surveyor to the Diocese of Peterborough. He was a Past President of the Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects, and had represented that body on the Council and the Allied Societies' Conference and was also for many years Chairman of the Northamptonshire Branch. He was a Past President and past Secretary of the Ecclesiastical Architects and Surveyors Association.

Frank Lloyd Wright [*Honorary Corresponding Member, United States*], died on 9 April 1959, aged 89.

Mr. Wright, who was the grandson of a Welsh immigrant, was born in Wisconsin, near the town of Spring Green. After studying engineering at Madison, Wisconsin, he became a draughtsman with Mr. J. L. Silsbee in Chicago in 1887. Shortly afterwards he entered the office of Messrs. Dankmar Adler and Louis Sullivan. In 1893 he began to work independently and during the next 20 years he built more than 100 houses, mostly large and medium-sized, throughout the Middle West. They were designed with projecting eaves and low pitched roofs to integrate with the landscape. There is hardly a modern house in the United States that does not owe at least some of its features to him. Among his innovations were the split-level living room, the open plan for house interiors, the corner picture window, modern radiant floor heating and the carport. Among the most characteristic are the Husser House in Chicago, built in 1899, with its cruciform plan, the Darwin Martin House at Buffalo (1904) and the Robie House in Chicago (1909).

His early non-domestic building introduced many technical innovations. The Larkin building in Buffalo (1905), was the first building in America to have metal bound plate glass doors and windows, all metal furniture, air conditioning and magnesite as a building material. With Unity Church in Oak Park, he invented a whole vocabulary of cubist forms to express the new material—poured concrete. His impressive Imperial Hotel in Tokyo, with its exterior composition of trees, plants and pools forming important elements, was one of the few buildings to survive the earthquake of 1923.

Mr. Wright built himself a house in Wisconsin—calling it Taliesin after the Welsh Druid-bard—and twice had to rebuild it after fire. After domestic difficulties and the expense of court proceedings and the general effects of the Depression had helped to bankrupt him, he turned Taliesin III into an apprentice school for architects. Friends and former clients eventually rallied round and he embarked on another career in 1929, building even more ambitiously than before.

Among his later works were Falling Water in Bear Run, Pennsylvania, his first reinforced-concrete house, in which he built cantilevered floors dramatically out over a waterfall, the Johnson Wax factory in Racine, Wisconsin (1936–39), with its soaring mushroom columns in the working space, and its 15-storey laboratory completely sheathed in glass tubing, added in 1947–48, and the Guggenheim Museum on Manhattan's Fifth Avenue, now nearing completion. In 1957 he visited Iraq to design an opera house at Bagdad.

At his other house—Taliesin East—in Arizona he constructed the model of his idea of a modern city, and here many students came to study with him.

In 1939 Mr. Wright delivered four lectures at the R.I.B.A., and these were afterwards published in book form as *An Organic Architecture, the Architecture of Democracy*, giving his philosophy of architecture. In 1941 he was awarded the Royal Gold Medal, and on receipt of the President's message conveying news of the award, Mr. Wright cabled back:

'You propose a great honour. I accept, gratified that during this terrific war England can think of honouring an architect. A culture like that can never lose.'

Among his many publications, which included innumerable articles for the architectural Press, are *Modern Architecture* (being the Kahn Lectures for 1930), *An Autobiography* (first published in 1928), *On Architecture* (selected writings 1894–1940, edited by Frederick Gutheim), *When Democracy Builds* (1945), *The Natural House* (1954), *A Testament* (1957) and *The Living City* (1958).

Membership Lists

ELECTION: 7 JULY 1959

The following candidates for membership were elected on 7 July 1959.

AS HON. CORRESPONDING MEMBERS (9)

Akcer: Faruk Sureyya, A.A.Dipl., Istanbul, Turkey.
Carbonell: Diego C., B.Arch.(Mass.Inst.Tech.), Caracas, Venezuela.
da Silva: Luis Cristino, Lisbon, Portugal.
Dobrovic: Nikola, Belgrade, Yugoslavia.
el Atabani: Hassan Mitwally, Khartoum, Sudan.
Lobato: Luis de Guimaraes, Lisbon, Portugal.
Satow: Dr. Takeo, Tokyo, Japan.
Takeyama: Dr. Kenzaburo, Tokyo, Japan.
Villanueva: Carlos Raul, Caracas, Venezuela.

AS FELLOW (1)

Wilkes: Francis Hilton, B.Arch.(McGill), F.R.A.I.C., V.D. [*A* 1920], Toronto, Canada.

AS ASSOCIATES (175)

Adkin: George, Leeds.
Albiston: Anthony William, Rickmansworth.
Aldrich: Brian John, Nottingham.
Bailey: James, Southampton.
Baker: William Bryntyl Harries, Dip. Arch. (Cardiff), Barcelona, Spain.
Barnes: Patrick Jude, B. Arch. (N.U.I., Dublin), Port-of-Spain, Trinidad.
Beighton: Graham, Dip.Arch.(Sheffield), Sheffield.
Bennett: John David, Dip.Arch.(The Polytechnic).
Benstead: Vernon Stuart, Carisbrooke, I.o.W.
Binnington: John Rawdon, Withernsea.
Bishop: Roy Edward James.
Blee: Anthony David.
Bowman: John Derek, Peterlee.
Brocklesby: Peter Edward, Wakefield.
Bruce: Herbert John, East Kilbride.
Bruce: Robert Keith, Alexandria, Dunbartonshire.
Bryans: John Kenneth, Stockport.
Buckingham: Peter Francis, Bexley.
Bunton: Samuel, East Kilbride.
Burniston: James Desmond, Kingston-upon-Thames.
Byrom: Ralph Ambrose, Poynton.
Caldwell: Anthony Humfrey.
Callcut: Derrick Arthur, Hove.
Campbell: James Edward Colin, Paisley.
Carr: Ian Colin, Woking.
Cashmore: William Frederick, Weston-super-Mare.
Chalmers: George William John, Dipl.Arch. (Northern Polytechnic), Fareham.
Chandler: John, Farnham.
Cheeseman: Kenneth Cornelius, Leigh-on-Sea.
Chen: Voon Fee.
Chu: Pak Chow, B.Arch.(Melbourne), Singapore, Malaya.
Claridge: (Miss) Margaret Mabel.
Clark: Nigel Cunliffe, Rossendale.
Clowes: George Martin, Dipl.T.P.(Leeds), Leeds.
Coats: Ian Hunter, Cheadle Hulme.
Cole: Peter, Vancouver, B.C., Canada.
Collins: Raymund Sayer, Chelmsford.
Cottle: Barrington Frederick, Bristol.
Crane: Philip George, Harwell.
Crerar: William Gunn, Denny.
Croydon: David Anthony, Chatham.
Cullinan: Edward Horder, B.A.(Cantab.), A.A. Dipl.
Cuming: Arthur Leslie, Merstham.
Dalton: John Barrie, Devizes.
Davis: Christopher Bryan, Bristol.
Davison: Bryan, Consett.
Dean: Peter Norris.
de Courcy: Antony John, Shamley Green.
Denby: John Edward, Dip.Arch.(Birm.), Newcastle, Staffs.
de Silva: Maggonagurunnanselage Walter Piyadasa, Dip.T.P.(Lond.), A.M.T.P.I.
Dry: David William, Redhill.
Dunn: Ian Peter, East Kilbride.
Eaton: Henry Barrington, Cheadle Hulme.
Edginton: John Anthony, Chester.
Edwards: Douglas, Sanderstead.
Engering: Michael Gordon.
Fairweather: Leslie Stephen, Lewes.
Fenner: John Eric Albert.
Fetherstone: John Michael, Sheringham.
Flinders: Alec, Tonbridge.
Forster: Alexander Ronald, Whitley Bay.
Frew: Robert, Helensburgh.
Gabb: John Kingsley, Bristol.
Gasiewicz: Zbigniew, M.C.
Gervis: Guy Rowsell, B.A.(Cantab.), A.A.Dipl.
Godding: Brian John.
Grayling: Brian Dorrall Percy, Ipswich.
Greenwood: Arthur Geoffrey, Dewsbury.
Gregory: John Leonard, Dip.Arch.(Birm.). Witham.
Harris: John Albert George, Lusaka, Northern Rhodesia.
Harrison: Keith.
Harvey: John William, Weston-super-Mare.
Hathaway: Kenneth Roy.
Heath: Ronald Victor, Dipl.Arch.(Northern Polytechnic).
Heatley: Mervyn David, Portadown.
Hellawell: Michael, Huddersfield.
Helme: John Derek, Lindfield.
Hill: William Heman, Bury.
Hodgkinson: Patrick Geoffrey, A.A.Dipl., Cambridge.
Hodgson: Russell, Redcar.
Holliman: (Miss) Patricia Gillian Eugenie.
Howard: Robert Anthony, A.A.Dipl.
Hunt: Philip Derek, Walton-on-Thames.
Hurley: Albert Francis William, Birmingham.
Innerdale: John Hamilton, Dip.Arch.(Manchester), Eastbourne.
James: William Leon, Harrogate.
Janes: Stanley Edwin, Tiverton.
Jones: Emlyn Ronald Proudlove, Wrexham.
Jones: Newman, Hong Kong.
Keal: Wilfred Herbert George, Chislehurst.
Keir: Patrick, Dip.Arch.(Abdn.), Newcastle upon Tyne.
Lamb: John.
Langdon: Alan Ernest, Exeter.
Leake: (Miss) Barbara Violet Frances, Hove.
Lee: Brian Statham, Formby.
Lee: Kip Lin, Dipl.Arch.(U.C.L.) Singapore, Malaya.
Louden: Alexander Grant, Prestwick.
MacDonald: Angus William, M.A.(Cantab.), Ewell.
McGill: Ian Graham, Glasgow.
McLaughlin: Joseph Francis.
MacLean: Gordon Donald, Willowdale, Ontario, Canada.
McMurray: Samuel Burns, Glasgow.
Marginson: Eric, Wigan.
Martin: Alfred Henry, Belfast.
Maxwell: John Joseph Gardner, D.A.(Glas.), Kilmarnock.
Meade: Patrick Vernon, Edenbridge.
Mehta: Kailash Nath.
Mellor: David Malcolm, Bexhill-on-Sea.
Miller: Dennis Ralph, Chigwell.

Miller-Williams: (Mrs.) Susan Ruth, M.A. (Cantab.), Gloucester.
Mitchell: William Ian.
Money-Kyrle: John Middleton, B.A.(Cantab.), Fairfax, California, U.S.A.
Moody: Brian Gifford, Horsham.
Moore: Stanley Sidney Stephen.
Moores: John Eric, Stockport.
Murphy: William Joseph, B.Arch.(N.U.I.Dublin), Cork.
Nugent: Kenneth Edward Thornton, Glasgow.
Olver: Frederick Austin, Newtownabbey.
Orton: (Mrs.) Hazel Winifred, Beverley,
Park: Miles Robertson, Weybridge.
Penny: John Campbell, Dip.Arch.(Birm.), Birmingham.
Perrin: Gerald Aubrey, Harlow.
Perrott: Ian Otho Gordon, Enniskillen.
Perry: Victor James, Chessington.
Perryman: John, Dip.Arch.(The Polytechnic), Gidea Park.
Phillips: Glyn George, Warwick.
Platts: Arthur Richard, Cleethorpes.
Porter: Dennis, Ilford.
Powell: Alan Ralph, Wallheath.
Preece: Derek Thomas, B.Sc.(Tech.), (Manchester), Ross-on-Wye.
Presswell: Paul Trevor.
Prew: Raymond, Newcastle-under-Lyme.
Prior: Alfred Kenneth Ernest, Leicester.
Raby: Denis Pierre, Liverpool.
Ranadive: Sharadchanadra.
Raote: Sadanand Madhusudan, Oxford.
Reshad: Izzet Ezel, Dip.Arch.(Sheffield), Sheffield.
Robinson: Edward Harry, Harlow.
Roseveare: Peter Carmichael, Plymouth.
Ruane: Brian Benham, Rochester.
Sanderson: Arthur Michael.
Sawyer: John Henry Allan.
Scott: John James.
Sefton: Alan Henry, Macclesfield.
Sharp: James, Rochdale.
Shaw: Eric, Huddersfield.
Skinn: Donald Mark, Stockton-on-Tees.
Smethurst: John, Middleton.
Smith: John Edgar, Walsall.
Spiller: John Rex, Dip.Arch.(The Polytechnic).
Stanfield: David John, Bangor, Co. Down.
Stobie: Geoffrey John.
Storie: John, Dundonald.
Taylor: Leonard, Wigan.
Thrasher: Paul Trevor, Hove.
Truesdale: Stanley Ashworth, Birmingham.
Trzebinski: Zbigniew Waclaw, Dip.Arch.(The Polytechnic), Nairobi, Kenya.
Uku: Vivian Thomas, Dip.Arch.(Sheffield), Warwick.
Upton: Albert Joseph.
Vickers: David Allan, Belper.
Wallis: (Miss) Pamela June, A.A.Dipl., West Wickham.
Warham: Christopher David, Dipl.Arch.(Kingston), New Malden.
Warner: John Halls, Brighton.
Watson: John Cunningham, Orpington.
Watt: David Harry Munro, Chilwell.
Watts: Anthony Charles, Sidcup.
Watts: Anthony Venning, Scarborough.
Webb: Kenneth Lawrence, Worcester Park.
Wheatcroft: Ian, B.A.(Arch.), (Manchester), Alderley Edge.
White: Reginald James, Southend-on-Sea.
Whitehead: John.
Worthington: Richard Geoffrey.
Young: Basil Ormond, Warlingham.
Young: Fraser Anderson, Glasgow.
Young: Harold, Halifax.

ELECTION: 6 OCTOBER 1959

An election of candidates for membership will take place on 6 October 1959. The names and addresses of the candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Monday 28 September 1959.

The names following the applicant's address are those of his proposers.

AS HON. CORRESPONDING MEMBERS (2)

Ramos: Carlos João Chambers, Director of the Oporto Higher School of Fine Arts, Rua D. Francisco de Almeida, 7, Lisbon, Portugal. Proposed by the Council.

Richards: John Noble, President, The American Institute of Architects, 1600 Madison Avenue, Toledo 2, Ohio, U.S.A. Proposed by the Council.

AS FELLOWS (7)

Cowan: Ronald [*A* 1939], 20 Finkle Street, Stockton-on-Tees; 'Redcroft', Richmond Road, Stockton-on-Tees. Professor W. B. Edwards, P. F. Burridge, E. R. Chilton.

Flinder: Alexander [*A* 1948], 30B Wimpole Street, W.1.; 'Malindi', 68 Sheldon Avenue, Highgate, N.6. Edwin Rice, Paul Nightingale, J. L. Curtis.

Jackson: Geoffrey Hart, A.A.Dipl. [*A* 1932], 61 South Molton Street, W.1.; 3 Meadow Way, Boxmoor, Herts. W. B. Simpson, Sir Howard Robertson, S. Rowland Pierce.

Picken: Ian Devon Fairlie, A.A.Dipl. [*A* 1938], Messrs. Laurence King, 9 Gower Street, W.C.; 51 Southway, N.W.11. Laurence King, A. B. Knapp-Fisher, A. H. Devereux.

Sadler: Ernest Howard[*A* 1936], 14 Hadley Road, New Barnet, Herts. N. F. Cachemaille-Day, J. M. Wilson, Allan Johnson.

Speakman: Harry Greenough, A.M.T.P.I., Dip. Arch.(Manchester), Dip.T.P.(Lond.) [*A* 1934], Crown Steps, St. Peter Port, Guernsey, C.I.; Kyrton, Fosse André, St. Peter Port. Arthur Ling, F. R. S. Yorke, V. C. Hunt.

Tweddell: Noel [*A* 1936], 79 Buckingham Palace Road, S.W.1.; 11 Blomfield Road, W.9. Clifford Culpin, The Hon. Lionel Brett, Harold Conolly.

AS ASSOCIATES (56)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

Allen: Robert, Dipl.Arch.(Leeds), (Leeds Sch. of Arch.), 8 St. Martins Terrace, Leeds, 7. F. Chippindale, D. A. Fowler, N. H. Fowler.

Angold: Alan Stanley, Dipl.Arch.(Northern Polytechnic), (Northern Poly.(London) Dept. of Arch.), 45 The Broadway, Cricklewood, N.W.2. T. E. Scott, C. G. Bath, S. F. Burley.

Aston: Kenneth Hugh, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), 24 Campbell Crescent, East Grinstead, Sussex. T. E. Scott, S. F. Burley, C. G. Bath.

Bailey: Ramon Maurice, Dipl.Arch. (Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), 'Dawn', Bridge Road, Maidenhead, Berks. T. E. Scott, Sidney Kaye, E. H. Firmin.

Baily: John Leslie, Dipl.Arch. (Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), 3 Weymouth Mews, Portland Place, W.1. Lieut.-Colonel L. K. Watson, Ronald Ward, T. E. Scott.

Bamford: Peter Mayall, B.Arch., M.C.D. (L'pool), (Liverpool Sch. of Arch.: Univ of Liverpool), 8 Elizabeth Mews, England's Lane, Hampstead, N.W.3. Prof. R. Gardner-Medwin, Frederick Gibberd, R. J. Double.

Barratt: Derek Arthur, A.A.Dipl.(Arch. Assoc. (London): Sch. of Arch.), 78 Friern Mount Drive, Whetstone, E. Barnet, N.20. Arthur Korn, H. G. Goddard, M. Pattrick.

Bourne: Nicholas John, Dip.Arch.(The Polytechnic), (The Poly. Regent Street, London: Sch. of Arch.), Top Flat, 81 St. George's Drive, S.W.1. Peter Goodridge, J. S. Walkden. J. S. Foster.

Boyer: Stuart Norman, B.Arch.(Natal), (Passed a qualifying exam. approved by the I.S.A.A.), No. 1 Grainville Manor, St. Saviour, Jersey, Channel Islands. Applying for nomination by the Council under Bye-law 3(*d*).

Burston: Derek James, Dip.Arch.(Cardiff), (Welsh Sch. of Arch.: The Tech. Coll., Cardiff), 42a Fidlas Road, Llanishen, Cardiff. Lewis John, Sir Percy Thomas, C. F. Jones.

Campbell: Malcolm Macdonald, Dip.Arch. (Birm.), (Birmingham Sch. of Arch.), c/o, Buckinghamshire County Architects' Dept., County Offices, Aylesbury, Bucks. A. Douglas Jones, J. F. R. Gooding, F. W. B. Charles.

Campbell: Robin McKellar, B.Arch.(C.T.), (Passed a qualifying exam. approved by the I.S.A.A.), London House, Guilford Street, W.C.1. Prof. L. W. T. White, O. Pryce Lewis and applying for nomination by the Council under Bye-law 3(*d*).

Carus-Wilson: Charles Maynard, B.A.(Cantab.), D.A.(Edin.), (Edinburgh Coll. of Art: Sch. of Arch.), Trinity Farm, Bagendon, Cirencester, Glos. E. M. Fry, Miss J. B. Drew, Esme Gordon.

Case: Roy, A.A.Dipl.(Arch. Assoc. (London) Sch. of Arch.), c/o, 72 Lavender Avenue, Mitcham, Surrey. C. A. R. Norton, R. D. Hammett, J. K. Hawkes.

Cattell: Geoffrey Ivor, Dip.Arch.(Birm.), (Birmingham Sch. of Arch.), 2 York Road, Edgbaston, Birmingham, 16. A. Douglas Jones, F. W. B. Charles, G. G. Baines.

Christie: Garry Bruce, D.A.(Glas.), (Glasgow Sch. of Arch.), 1243 Cathcart Road, Mount Florida, Glasgow. Prof. W. J. Smith, J. A. Coia, A. D. Cordiner.

Clemence: Geoffrey Patrick (Final), 104 Kedleston Road, Derby. S. Morrison, R. W. Cooper, E. H. Ashburner.

Cooper: Alfred William, Dip.Arch.(Abdn.), (Aberdeen Sch. of Arch.: Robert Gordon's Tech. Coll.), 34 Greig Street, Inverness. E. F. Davies, William Glashan, Lieut.-Colonel D. P. Hall.

Crossley: John George, B.Arch. (L'pool), (Liverpool Sch. of Arch.: Univ. of Liverpool), 1072 Bradford Road, Birstall, nr. Leeds. A. W. Glover, Kenneth Turner, Prof. R. Gardner-Medwin.

Davies: John Francis (Final), Flat No. 2, Bourne House, Bath Road, Chippenham, Wilts. P. W. Edwards, C. G. Toy, R. M. Hewlett.

Deal: John Michael, Dipl.Arch.(Oxford), (Sch. of Tech. Art & Commerce, Oxford Sch. of Arch.), 80 Battle Road, St. Leonards-on-Sea, Sussex. Reginald Cave, E. D. Mills, Raglan Squire.

Denn: Michael, A.A.Dipl.(Arch. Assoc. (London): Sch. of Arch.), 18 Upper Grosvenor Street, W.1. Anthony Cox, C. K. Capon, E. E. Somake.

Dorrell: John Richard (Final), 17 Stirling Close, Chesterton, Cambridge. Reginald Cave, A. C. Crook, David Roberts.

Duncan: George, D.A., Dip.T.P.(Glas.),(Glasgow Sch. of Arch.), 18, Smith Street, Ayr. Prof. W. J. Smith, I. G. Lindsay, Hubert Bennett.

Edwards: (Miss) Catherine Gaynor, B.Arch. (L'pool), (Liverpool Sch. of Arch.: Univ. of Liverpool), 17 Salisbury Road, Cressington Park, Liverpool, 19. Prof. R. J. Gardner-Medwin, R. R. Young, Dr. Ronald Bradbury.

Forbes: Brian Keenan, Dip.Arch.(Sheffield), (Univ. of Sheffield, Dept. of Arch.), 67 Mortlake Road, Kew Gardens, Richmond, Surrey. Prof. Stephen Welsh, H. B. Leighton, J. Berger.

Foy: John Frederick, Dip.Arch.(Sheffield), (Univ. of Sheffield Dept. of Arch.), 9 Woodland Grove, Penwortham, Preston. Prof. Stephen Welsh, H. B. Leighton, Prof. John Needham.

Ganter: (Miss) Susan, Dipl.Arch.(Oxford), (Sch. of Tech. Art & Commerce, Oxford Sch. of Arch.), 51 Cowley Road, Oxford. Reginald Cave, Thomas Rayson, David Beecher.

Harrison: Henry Walter, Dip.Arch.(Birm.), (Birmingham Sch. of Arch.), 244 Camp Hill Road, Nuneaton, Warwickshire. A. Douglas Jones, G. A. G. Miller, F. W. B. Charles.

Harvey: George Albert, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London) Dept. of Arch.), 44 Mount Pleasant Crescent, Stroud Green, N.4. W. A. Guttridge, Charles Tarling, T. E. Scott.

Ivatts: Stanley Thomas, Dip.Arch.(The Polytechnic), (The Poly., Regent Street, London: Sch. of Arch.), Old Farm Cottage, Ewhurst, Cranleigh, Surrey. J. S. Walkden, Frank Scarlett, J. S. Foster.

Johnson: Edward, Dipl. Arch.(Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), 21 Eastbury Road, Petts Wood, Kent. T. E. Scott, C. G. Bath, S. F. Burley.

Jones: Richard Ellis, Dip.Arch.(Cardiff), (Welsh Sch. of Arch.: The Tech. Coll. Cardiff), Gwelfor, Upper Llandwrog, Caernarvon. Lewis John, B. T. Howells, P. M. Padmore.

Jubb: Peter, B.Arch.(Dunelm), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 17 Waterloo Road, Barnsley, Yorks. Prof. W. B. Edwards, F. Fielden, Prof. J. H. Napper.

Lees: Douglas Raymond, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London): Dept. of Arch.), 23 Etherley Road, N.15. H. K. Wakeford, C. J. Jerram, S. F. Burley.

McGraw: Charles William, Dip.Arch.(C.T.), (Passed a qualifying exam. approved by the

I.S.A.A.), London House, Guilford Street, W.C.1. Prof. L. W. T. White, O. Pryce Lewis and applying for nomination by the Council under Bye-law 3(*d*).

Mackley: Brian George (Special Final) 'Swinley', School Lane, Ascot, Berks., Frank Scarlett and applying for nomination by the Council under Bye-law 3(*d*).

Malone: Joseph Francis, Dip.Arch.(Nott'm), (Nottingham Sch. of Arch.), 9 Western Terrace, The Park, Nottingham. J. G. Woollatt, J. W. M. Dudding, E. H. Ashburner.

Moore: David Bowerman, A.A.Dipl.(Arch. Assoc. (London): Sch. of Arch.), 23 Daux Avenue, Billingshurst, Sussex. Applying for nomination by the Council under Bye-law 3(*d*).

Newberry: Michael Adrian (Final), 1 Selwood Terrace, Onslow Gardens, S.W.7. Applying for nomination by the Council under Bye-law 3(*d*).

Phillips: Robert John, Dip.Arch.(Dunelm), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 22 Arlington Avenue, Newcastle upon Tyne, 3. Prof. W. B. Edwards, Prof. J. H. Napper, F. Fielden.

Pirn: Rein, B.Arch.(Natal), (Passed a qualifying exam. approved by the I.S.A.A.), 44 Harcourt Terrace, S. W.10. Applying for nomination by the Council under Bye-law 3(*d*).

Riley: Brian Wright, Dipl.Arch.(Leeds), (Leeds School of Arch.), 221 Blackpool Road, Deepdale, Preston, Lancs. F. Chippindale, D. A. Fowler, Kenneth Turner.

Roy: John Forsyth, D. A. (Edin.), (Edinburgh Coll. of Art: Sch. of Arch.), 170 Montgomery Street, Edinburgh, 7. Prof. R. H. Matthew, Alan Reiach, J. Holt.

Rutter: Andrew Farley, A.A.Dipl. (Arch. Assoc. (London) Sch. of Arch.), Woodgate, 6 St. Rumbolds Road, Shaftesbury, Dorset. Walter Marmorek, Austin Blomfield, Marshall Sisson.

Scott: Kenneth Sydney, Dipl.Arch.(Northern Polytechnic), (Northern Poly. (London) Dept. of Arch.), 15 Park Street Lane, Park Street, St. Albans, Herts. T. E. Scott, S. F. Burley, C. G. Bath.

Senior: Thomas Raymond (Final), 4 Langwith Drive, Langwith, nr. Mansfield, Notts. N. Summers, J. G. Woollatt, B. D. Thompson.

Snow: John, B.A.(Arch.), Sheffield), (Univ of Sheffield: Dept. of Arch.), Rose Cottage, High Street, Rawmarsh, nr. Rotherham, Yorks. Prof. Stephen Welsh, J. L. Womersley, Prof. John Needham.

Spillman: William Edward (Special Final), 37 Eldred Drive, Orpington, Kent. Peter Goodridge, J. S. Walkden and applying for nomination by the Council under Bye-law 3(*d*).

Squire: John, Dipl.Arch.(Leeds), (Leeds Sch. of Arch.), 17 Child Lane, Roberttown, Liversedge, Yorkshire. F. Chippindale, D. A. Fowler, N. H. Fowler.

Swart: Jacob Richard Hilton, B.Arch.(C.T.), (Passed a qualifying exam. approved by the I.S.A.A.) c/o, Messrs. Ellery Anderson, Roiser and Falconer, Imperial House, Stroud, Glos. Prof. L. W. T. White and applying for nomination by the Council under Bye-law 3(*d*).

Turnbull: Harley Ian, Dip.Arch.(Dunelm), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 1 Bentinck Road, Fairfield, Stockton-on-Tees, Co. Durham. Prof. W. B. Edwards, J. H. Napper, Bruce Allsopp.

Walkinshaw: Robert Pringle, D.A.(Glas.), (Glasgow Sch. of Arch.), 215 Cumbernauld Road, Muirhead, Chryston, by Glasgow. Prof. W. J. Smith. J. A. Coia, A. D. Cordiner.

Walsh: Cedric, Dipl.Arch.(Leeds), (Leeds Sch. of Arch.), 'Ceandel', Rossett Holt Avenue, Pannal Ash Road, Harrogate. F. Chippindale, Kenneth Turner, D. A. Fowler.

Watts: Robert John, A.A.Dipl.(Arch. Assoc. (London): Sch. of Arch.), 32 Bede House, Manorfields, S.W.15. Arthur Korn, C. K. Capon, Alan Devereux.

Williams: Alan, B.Arch.(Dunelm), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 123 Rothbury Terrace, Heaton, Newcastle upon Tyne. Prof. W. B. Edwards, Bruce Allsopp, F. Fielden.

ELECTION: 3 NOVEMBER 1959

An election of candidates for membership will take place on 3 November 1959. The names and addresses of the overseas candidates, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, R.I.B.A., not later than Saturday, 24 October 1959.

The names following the applicant's address are those of his proposers.

AS ASSOCIATES (11)

The name of a school, or schools, after a candidate's name indicates the passing of a recognised course.

Anderson: William David, D.A.(Dundee), (Dundee Coll. of Art: Sch. of Arch.), 208 Mackey Building, Sudbury, Ontario, Canada. Prof. John Needham, T. H. Thoms, Basil Spence.

Bish: John Arthur, (Passed a qualifying exam. approved by the N.Z.I.A.), 160 Cotham Road, Kew, E.4., Victoria, Australia. Prof. C. R. Knight, M. H. Parry, E. L. B. Henderson.

Bywater: Trevor Malcolm Hallett, Dip.Arch. (Birm.), (Birmingham Sch. of Arch.), 1294 High Street, North Bay, Ontario, Canada. G. A. G. Miller, K. A. Lloyd, J. F. R. Gooding.

Dobbin: Henry Anthony Crawford, Dip.Arch. (Auck.N.Z.), (Passed a qualifying exam. approved by the N.Z.I.A.), 11A, Duncan Street, Wanganui East, New Zealand. Prof. A. C. Light and the President and Hon. Secretary of the N.Z.I.A. under Bye-law 3(*a*).

Harrison: Colin Rees, A.A.Dipl.(Arch. Assoc. (London): Sch. of Arch.), P.O. Box 136, P.W.D. Architects' Department, Accra, Ghana. M. Pattrick, H. G. Goddard, Arthur Korn.

Hunt: (Mrs.) Anne Deborah, Dipl.Arch. (Kingston), (Sch. of Art, Kingston-upon-Thames: Dept. of Arch.), 2623 St. Paul Street, Baltimore, 18, Maryland, U.S.A. Ronald Ward and applying for nomination by the Council under Bye-law 3(*d*).

Lau: (Miss) Wai Chen, B.Arch.(Dunelm), (King's Coll. (Univ. of Durham), Newcastle upon Tyne, Sch. of Arch.), 64B Stevens Road, Singapore, 10, Malaya. Prof. W. B. Edwards, C. J. Parker, W. I. Watson.

Lewis: Dennis Myles, Dip.Arch.(Sheffield), (Univ. of Sheffield Dept. of Arch.), 25 Gage Avenue, Scarborough, Ontario, Canada. Prof. Stephen Welsh, A. C. Lewis, H. B. Leighton.

Lim: William Siew Wai, A.A.Dipl. (Arch. Assoc. (London): Sch. of Arch.), 3 Chancery Hill Road, Singapore, 11, Malaya. M. Pattrick, W. I. Watson, F. M. Howie.

Mayne: (Mrs.) Patricia Mary, B.Arch.(N.U.I. Dublin), (Univ. Coll., Dublin, Ireland: Sch. of Arch.). University of Hong Kong, Hong Kong. W. W. C. Shewan, H. G. Robinson, R. E. Lee.

Toh: Shung Fie, Dip.Arch. (Melbourne, B.Arch. (Melbourne), (Passed a qualifying exam. approved by the R.A.I.A.) 5 Bukit Pasoh Road, Singapore, 2, Malaya. Prof. B. B. Lewis, R. G. Parker, Mrs. Hilary Lewis.

Members' Column

This column is reserved for notices of changes of address, partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. Kenneth J. Campbell [*A*], has been appointed Principal Housing Architect to the London County Council in succession to **Mr. H. J. Whitfield Lewis** [*F*].

Mr. Ronald J. Cassé [*L*], has been appointed Deputy Principal Architect to the Housing Department of the Tasmanian Government, Australia.

Mr. A. G. Christopherson [*A*], Ministry of Works, Auckland, New Zealand, has now taken up his appointment as Assistant District Architect, Dunedin, and his new address is c/o Ministry of Works, Box 451, Dunedin, N.Z.

Mr. David Dobereiner [*A*], has been appointed Assistant Professor at the Department of Landscape Architecture, University of Georgia, Athens, Georgia, U.S.A.

Mr. N. L. Earles [*A*], has been appointed Chief Architect to the South Auckland Education Board, Hamilton, New Zealand.

Mr. Stirrat Johnson-Marshall, C.B.E. [*A*], has been appointed a member of the Welwyn Garden City and Hatfield New Town Development Corporations.

Mr. G. Langdon-Thomas [*A*], has taken up the post of Architect to the Joint Fire Research Organisation at Boreham Wood, Elstree, Herts., where he will be pleased to receive useful technical literature.

Mr. R. J. McGregor Williams [*A*], has been appointed Staff Architect to Messrs. Chiesmans, Ltd., of Lewisham, London S.E.13., where he will be pleased to receive trade journals, etc.

Mr. Maxwell Miller [*A*], has been appointed Staff Architect jointly for Messrs. Simpsons, Ltd., and Messrs. Simpsons-Sears, Ltd., and his address is now 45 Richmond Street, West, Toronto 1, Ontario, Canada.

Mr. W. J. N. Mills [*A*], has taken up an appointment as Executive Architect with the Ministry of Works, Northern Nigeria, and his address is now c/o Ministry of Works, Zaria, N. Nigeria, where he will be pleased to receive trade catalogues, etc.

Mr. Vernon Z. Newcombe [*F*], has accepted an appointment as United Nations Housing and Town Planning Adviser to the Karachi Development Authority for a period of twelve months. He will still remain an Associate Partner of Messrs. Raglan Squire and Partners [*F*/*L*/*A*].

Mr. Alan C. Parnell [*A*], has been appointed Consultant Architect and Store Designer to Messrs. Debenhams, Ltd., and has relinquished his private practice at 14 Sackville Street, London, W.1. The new office will be at Messrs. Debenhams, Ltd., 91 Wimpole Street, London, W.1., where he will be pleased to receive trade catalogues and samples, etc.

Mr. Owen N. Roberts, M.T.P.I. [*A*], resigned from the City Architectural and Planning Department, Coventry, on taking up the appointment on 22 June of Senior Planner with Basildon Development Corporation, Gifford House, Essex.

Mr. P. H. Rose, A.R.I.C.S. [*A*], has taken up the appointment of Lecturer at the Bournemouth College of Technology and Commerce in the Department of Building.

Mr. P. B. Wright [*A*], has been appointed Staff Architect to Mr. Henry S. Tucker, A.R.I.C.S., The Parade, Liskeard, Cornwall, where he will be pleased to receive trade literature.

PRACTICES AND PARTNERSHIPS

Mr. James Barry [*A*], has begun private practice with **Mr. Denis J. Kelly** under the style of **Kelly and Barry** at 29 South Mall, Cork, Ireland, where they will be pleased to receive trade journals, catalogues, etc.

Mr. J. E. B. Carpenter [*A*], has taken **Mr. J. E. Bull** [*A*] into partnership under the style of **Carpenter and Bull** at 27 Queen Square, Bath, Somerset.

The name of the firm of **R. Fielding Dodd and Stevens** of 21 Turl Street, Oxford, has been changed to **Stevens, Flavel and Beard.** The partners are still **Mr. K. A. Stevens** [*F*], **Mr. G R. S. Flavel** [*A*], and **Mr. G. J. Beard** [*A*].

Mr. J. V. Gandhe [*A*], has resigned from the post of Architect in the Military Engineering Service, Government of India, and has started private practice as a consulting architect at 479/1 Tilak Road, Poona 2, Bombay, India, with offices also at Bombay, Nagpur and Jalgaon. He will be pleased to receive trade catalogues at the Poona address.

The partnership of **Messrs. Henderson, Day and England** of Hoe House, Peaslake, Surrey and 18 Gower Street, London, W.C.1., has been dissolved by mutual consent. **Mr. J. G. D. Henderson** [*A*] will continue to practise under the style of **Henderson, Day and England** at Hoe House, Peaslake, and **Mr. L. J. Day** [*A*] and **Mr. P. G. England** [*A*] are now practising at 18 Gower Street as **Day and England.**

Mr. Stanhope C. Hodson [*A*], has commenced practice on his own account at 79 Upper Hanover Street, Sheffield 3 (Sheffield 26156) where he will be pleased to receive trade literature.

Messrs. G. J. Jolly and Partners have acquired the practice of **Mr. J. Ernest Franck** [*F*] and are practising from 73 Upper Richmond Road, London, S.W.15. Mr. Franck will remain with the firm as consultant.

Mr. G. Raymond Jones [*A*], has commenced private practice at 23 Regent Street, Wrexham (Wrexham 3051–2), where he will be pleased to receive trade literature.

Following the death of **Mr. C. W. M. Potts** [*L*], the practice of **Joseph Potts and Son**, 57 John Street, Sunderland, has been acquired by **Messrs. Matkin and Hawkins** [*F*] of Barclays Bank Chambers, 53 Fawcett Street, Sunderland. Any inquiries should now be addressed to Messrs. Matkin and Hawkins.

Mr. Alan Reiach [*F*], has taken **Mr. George A. Macnab** [*A*] **and Mr. Stuart Renton** [*A*] into partnership under the style of **Alan Reiach and Partners** at 22 Ainslie Place, Edinburgh 3.

Mr. P. Neville Taylor [*A*] and **Mr. T. Jeffrey Yandell** [*A*], formerly of the Architects Department, The Bristol Aeroplane Company, Ltd., Bristol, have commenced practice under the style of **Taylor and Yandell** at 18 Whiteladies Road, Clifton, Bristol, 8 (Bristol 30515).

The partnership between **Mr. Gilbert H. Trafford** [*A*] and **Mr. Alwyn P. Lovatt** under the style of **Trafford and Lovatt** of 16 Market Place, Leek, Staffs, has been dissolved. Mr. Trafford is now practising on his own account at the same address.

CHANGES OF ADDRESS

Mr. R. Taunton Boutall [*F*], has changed his address to 27 Margaretta Terrace, Chelsea, London, S.W.3.

Mr. Gerald E. Burgess [*F*], has changed his office address to 10 Highfield Road, Dartford, Kent. The telephone number remains Dartford 3028.

Messrs. F. W. Charity, Thirtle and Duke [*A*/*F*], have moved to 342–346 Grand Buildings, Trafalgar Square, London, W.C.2.

Mr. W. George Clarke [*A*], has changed his address to I. M. Pei and Associates, 385 Madison Avenue, New York 17, N.Y., U.S.A.

Messrs. Cocker, Clews and Cocker [*AA*], have transferred their offices to 2 Post Office Street, Market Street, Altrincham, Cheshire (Altrincham 1534).

Mr. M. R. Cousins [*A*], has changed his address to 24 Wigmore Road, Wigmore, Gillingham, Kent.

Mr. T. J. Denny [*L*], has changed his office address to Pearl Assurance Chambers, 77–79 High Street, Watford, Herts. (Watford 27774).

Mr. H. R. Dubash [*A*], has moved to 6 Dale House, Honor Oak Estate, Frendsbury Road, Brockley, London, S.E.4.

Messrs. James W. Ferrie and Partners [*AA*], have changed their address to 5th Floor, Great Eastern Life Building, Ampang Road, Kuala Lumpur, Malaya.

Messrs. Fowell, Mansfield and Maclurcan [*F*/*A*], have changed their address to 87 Berry Street, North Sydney, Australia.

Messrs. Thomas Garrett and Son [*F*], have moved their offices to 36A Duke Street, Brighton 1, Sussex (Brighton 23840).

Mr. A. L. Hall [*F*], has changed his address to 'Three Planes', 41A Upland Road, Selly Park, Birmingham 29.

Mr. Ronald Hardy, M.B.E. [*A*], has moved to new offices at 9 Devereux Court, Strand, London, W.C.2. (Central 6652–4).

Mr. Bernard Hills [*A*], has changed his address to Wingrove Cottage, Queen Street, Paddock Wood, Kent.

Mr. Frank Webster Holloway, M.C. [*L*], has changed his address to 'Moorcroft', Farleigh Common, Warlingham, Surrey.

Mr. N. S. Johri [*A*], has changed his address to the Department of Town and Village Planning, 7 Bandaria Bagh, Lucknow, U.P., India.

Mr. J. O. Knight [*A*], has changed his address to No. 8 Yanco Road, Turramurra, Sydney, N.S.W., Australia.

Mr. J. M. McLachlan [*A*], has changed his address to Starston, Church Hill, Horsell, Woking, Surrey (Woking 1232).

Mr. Alec B. Maskill [*A*], has changed his address to 264 Eakring Road, Mansfield, Notts.

Mr. Frank Miller [*A*], has changed his address to 15 Auburn Terrace, Indooroopilly, Brisbane, Queensland, Australia.

Mr. John Milnes [*A*], has changed his address to Half Acre, Meadow Road, Ashtead, Surrey.

Messrs. Morrison and Partners [*F*/*A*], have moved their London office to 70 Wimpole Street, W.1. The telephone number remains Hunter 1628–9. The Derby and Sheffield offices are still at St. Alkmunds House, Belper Road, Derby, and 14 Northumberland Road, Sheffield 10.

Mr. William S. Newman [*F*], has moved his office to 139 High Street, Lewes, Sussex. The telephone number remains Lewes 1333.

Mr. F. E. Pettersen [*A*], has changed his address to 2 Oak Road, Epping, Essex.

Mr. J. M. Pine [*A*], has changed his address to Apt.1, 192 Maclaren Street, Ottawa, Ontario, Canada.

Mr. Hugh F. Rivers [*A*], has changed his address to 30 Maude Street, Box Hill North, E.12, Victoria, Australia.

Mr. Peter Robinson [*A* 19158], has changed his private address to 2 Cranley Place, London, S.W.7. (Knightsbridge 6038).

Mr. T. B. Sanders [*A*], has changed his private address to Baynards Manor Hall, Baynards, Rudgwick, Sussex (Rudgwick 223).

Mr. Roland George Smith [*A*], has changed his address to 61 The Meadway, Barnet, Herts.

Mr. T. W. Taylor [*A*], has changed his address to Laneham Chambers, Laneham Street, Scunthorpe, Lincs., where he will be pleased to receive trade literature.

Mr. W. Wylton Todd [*F*], has moved to 5 Prince of Wales Terrace, South Kensington, London, W.8. (Western 9342), where he will be pleased to receive all trade circulars.

Mr. Alan J. Tyldesley [*A*], has changed his address to Littlecroft, Ash Lane, Wells, Somerset (Wells 3508).

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Associate with considerable and varied experience seeks responsible position in London or the Home Counties with a view to partnership. Some capital available. Box 25, c/o Secretary, R.I.B.A.

For Sale. Established East Anglian sea-side practice, with attractive premises, ample space, modern equipment and furniture, including living accommodation if required. Box 64, c/o Secretary, R.I.B.A.

Well-known efficient provincial practice with staff and spacious well-equipped premises, also with connections in London, wishes to associate with larger London firm, short of space and staff, to increase scope of work. Box 65, c/o Secretary, R.I.B.A.

For Sale. The long-established practice at Southend-on-Sea of a deceased member including lease (one year only unexpired) of offices (net rent £34 per annum exclusive) at a low price; office furniture, instruments and equipment (which include a Stanley 10 in. Dumpy level in polished wood case in almost new condition) and textbooks to be taken by purchaser at valuation. Very suitable as a branch office for an established firm or a newly qualified architect. Audited accounts available. Box 71, c/o Secretary, R.I.B.A.

Architect with small expanding London office requires recently passed final, school-trained assistant with qualities of leadership to work up with view to junior partnership. Box 72, c/o Secretary, R.I.B.A.

Bristol architect requires qualified and experienced assistant, under 40 years of age, for commercial and industrial projects, with a view to partnership. Apply, stating full particulars of training and experience and salary required, together with names of two referees to Box 74, c/o Secretary, R.I.B.A.

Associate (39), with 17 years varied experience including eight years as principal on own account, seeks partnership with older member wishing to retire gradually from practice. Preferably eastern counties north of London. Some capital available. Box 75, c/o Secretary, R.I.B.A.

Experienced Associate (30), public school, requires partnership in provincial/country practice, preferably Sussex, Hants or Kent, or where principal seeks gradual retirement. Some capital available. Box 77, c/o Secretary, R.I.B.A.

Fellow, retiring from provincial practice in National Park district, would hand over well-situated and fully-equipped small office on very reasonable terms to suitable successor. Box 78, c/o Secretary, R.I.B.A.

Partnership required, or post leading thereto, in active north country practice having contemporary outlook. Capital available. Box 79, c/o Secretary, R.I.B.A.

WANTED

Wanted. Member requires two or three double elephant drawing boards and tee squares, preferably secondhand. Box 73, c/o Secretary, R.I.B.A.

The Royal Institute of British Architects as a body, is not responsible for statements made or opinions expressed in the JOURNAL.

Competition for the Design of a New Symbol

CONDITIONS

1. The Architects' Benevolent Society has long felt the need for a new Symbol to represent the Society on its publications and letterheading. It has now decided to hold an open competition for such a design.

2. The present symbol is shown above. The year 1850 is not to be included in the new design. The symbol must be capable of reproduction by single colour line block. Mechanical tints are admissible, but effective reproduction at any scale is essential.

3. Each design is to be drawn to any convenient scale in black ink on a white card measuring approximately 8 in. × 6 in.

4. The Society offers the following prizes:
1st: 25 guineas, 2nd: 15 guineas, 3rd: 10 guineas.

5. The Assessors appointed to judge the designs and award the prizes are: Professor Sir Leslie Martin, M.A., Ph.D., [*F*], E. Paolozzi, and W. G. Howell, D.F.C., M.A., A.A.Dipl., [*A*].

6. Entries are to be sent to the Secretary, The Architects' Benevolent Society, 66, Portland Place, W.1. so as to reach her not later than midday, Monday 16 November 1959. No responsibility is accepted by The Architects' Benevolent Society for drawings lost, delayed or mislaid in transit.

7. Competitors may enter more than one design and are, in fact, encouraged to do so, but each must be submitted in a separate envelope marked 'A.B.S. Symbol' on the outside. Each envelope must contain:

(*a*) One design only with no name or distinguishing mark of any kind.
(*b*) A sealed envelope containing the name and address of the competitor and stating that it is her or his work.
(*c*) A cheque, postal order or stamps to the value of 2*s*. 6*d*. payable to The Architects' Benevolent Society.

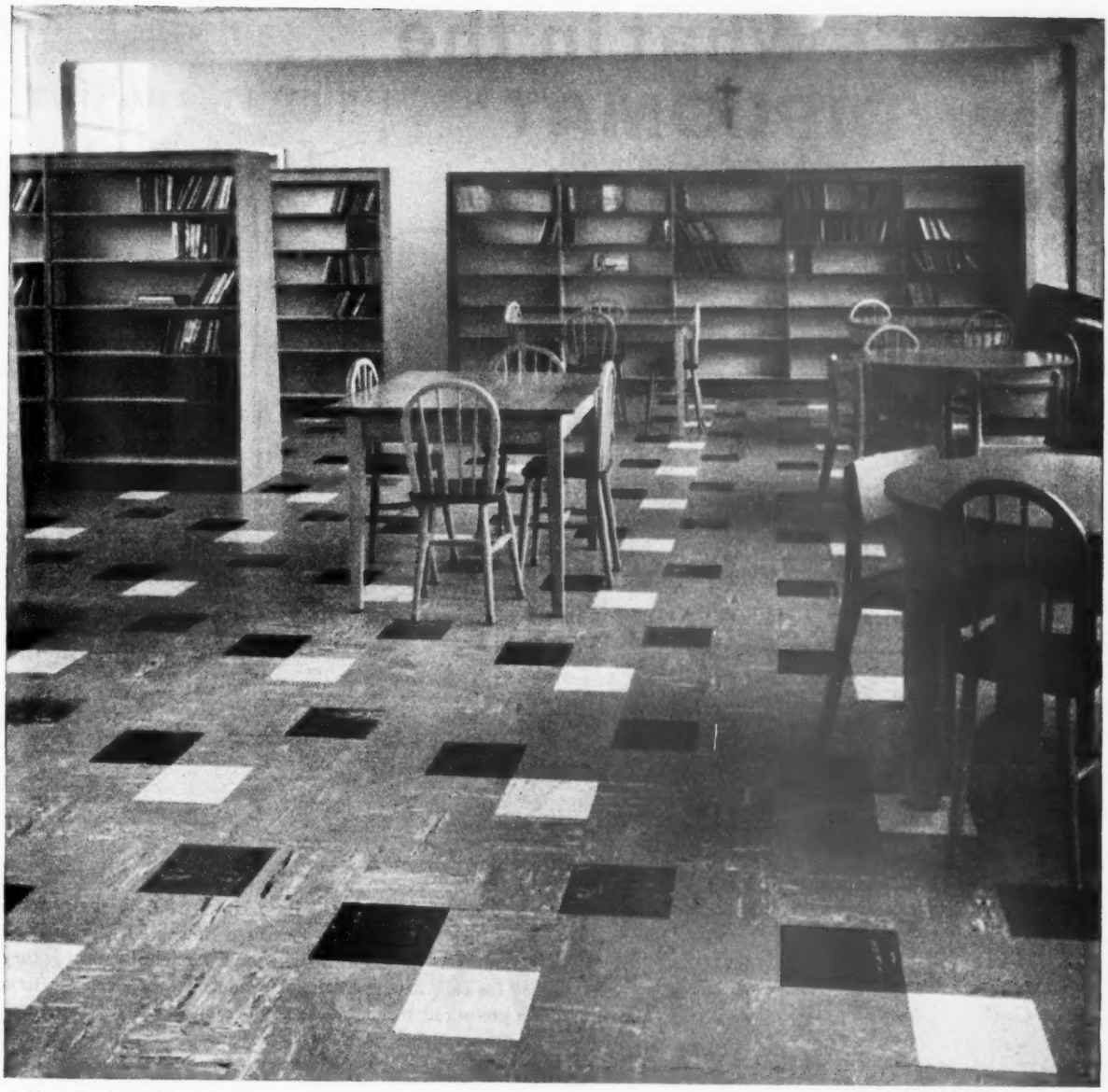
8. The copyright of the winning design will become the property of the Society.

9. The three premiated designs will become the property of the Society. Other designs may be collected from the offices of the Society after the competition up to 31 December 1959. They are not otherwise returnable.

10. The result of the competition will be announced at The Architects' Benevolent Society's Ball at Grosvenor House on Wednesday, 9 December, and in the columns of the technical Press. The 50 best designs will be exhibited at the Ball.

11. Designs which do not comply with these conditions will be excluded from the Competition.

12. Competitors are reminded that the object of the Society is to help architects and their families who are in need. The Society is entirely supported by voluntary contributions. An entry to this competition is a subscription to the Society.



Architects: Harrison & Cox, F./A.R.I.B.A. *Contractors:* Hinkins & Frewin, Oxford

Over 1,330 sq. yds. of Marley floor tiles

were used throughout the new

Blessed Edmund Campion School at Iffley, Oxford

MARLEY

SEVENOAKS · KENT · SEVENOAKS 55255 · LONDON SHOWROOMS: 251 TOTTENHAM COURT ROAD · W.1

What's what in the new 'DIPLOMAT' Small Bore Unit

1. Sigmund THERMOPAK accelerator pump.
2. HORSTMANN clock controller incorporating 5 amp. switch.
3. Thermostat.
4. Unit pre-wired in flexible conduit to junction box.
5. Air vent.
6. 2 x 1¼ B.S.P. flow tappings.
7. Central heating return connection 1 in. B.S.P.
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9. Thermo/electric flame safety device.
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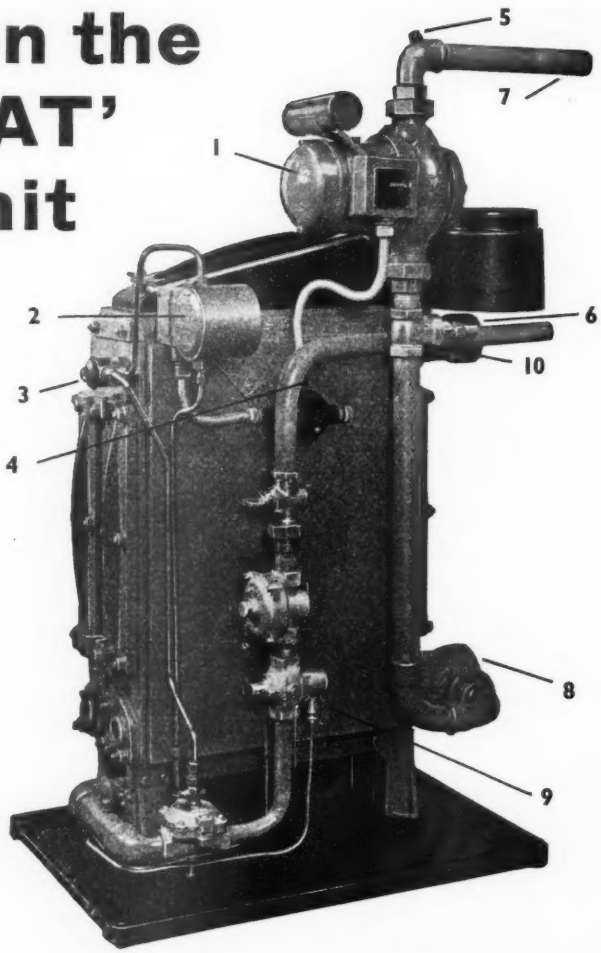

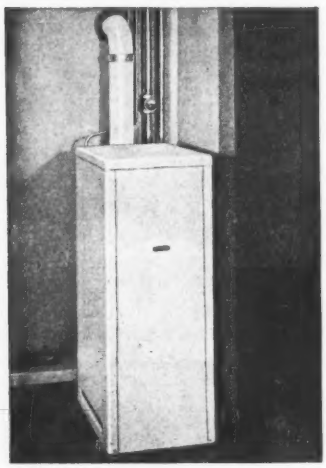

LEFT: *The totally enclosed 'Diplomat' Small Bore Unit in a kitchen setting.*

New 'Diplomat' 30, 44 and 66 Gas-fired Small Bore Units have *all* their works inside *one* good-looking case. Like all 'Diplomat' Gas-fired Boilers, all servicing and maintenance can be carried out from the front. Installation is straight forward as they are conceived and designed for easy fixing. Electrical connections between the time switch and accelerator are pre-wired to cut down installation work. A 'Diplomat' 100 Small Bore Unit is also available as a packaged unit but with accelerator mounted behind the casing.

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models of self-control

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A subsidiary of The De La Rue Company Limited.

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Nakuru's pride and joy. The Ruberoid Contract Agents Messrs. Naumann, Gepp (East Africa) Ltd. were responsible for all roofing. Ruberoid Contract Departments throughout the British Isles and Contract Agents overseas offer the benefits of expert advice at the planning stage and skilled craftsmen to execute the work.

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Gypsum Plaster is one of the finest fire resisting materials known to the Building Industry, but when Perlite is incorporated as in "Murilite" Pre-mixed Perlite Plaster, its fire resistance is greatly increased. This outstanding quality of fire resistance is amply borne out by the high fire ratings awarded by the Fire Research Station, as a result of tests carried out on various types of structure.

Write to the address shown below for complete details of these fire rating tests made in accordance with British Standard Definitions No. 476:1953.

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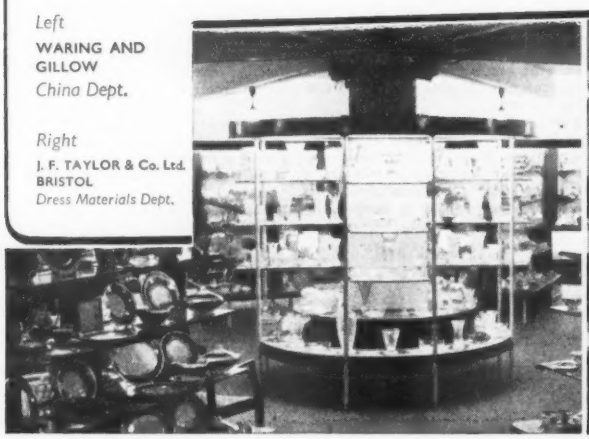

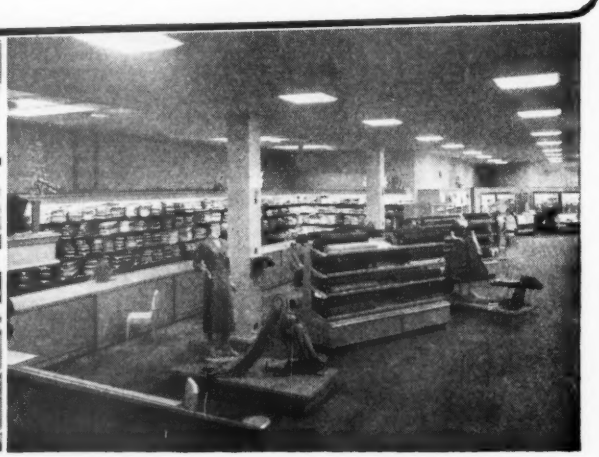

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Canada Trend House—illustrating Maple Flooring in lounge.

CANADIAN HARDWOODS

(No import licence required after August 1st)

CANADIAN MAPLE

Hard, heavy, creamy-white in colour—works easily.

TYPICAL USES — Flooring; furniture; dowels.

SPECIAL ADVANTAGES — Hard and smooth-wearing surface; takes high polish; excellent resonance properties; turns exceptionally well; good gluing properties.

CANADIAN BIRCH

Hard-wearing, wide-utility hardwood of uniform texture, from light yellow to reddish brown.

TYPICAL USES — Flooring; furniture; interior trim; ladder rungs.

SPECIAL ADVANTAGES — Strong and resistant to impact; hard and smooth-wearing surface; uniform texture; easily stained.

CANADIAN BASSWOOD

From creamy-white to very light brown, softer hardwood.

TYPICAL USES — Furniture; patterns and models; picture frames.

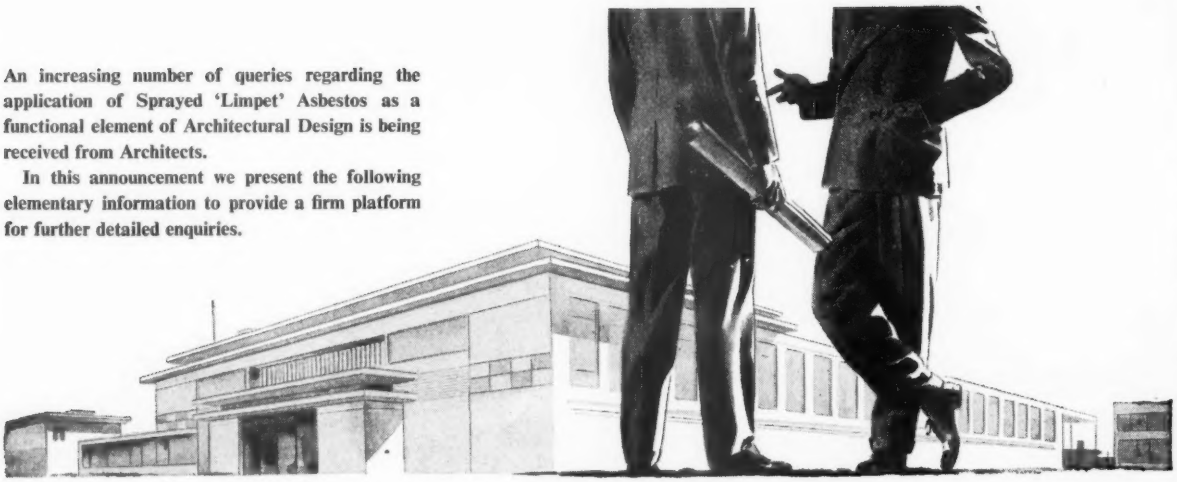
SPECIAL ADVANTAGES — soft-textured hardwood; easily dried; takes smooth finish; takes paints and lacquers well.

(Plywoods also free of import licence)

For further information on Canadian Woods, contact: Commercial Counsellor (Timber), Canada House, London, S.W.1.

An increasing number of queries regarding the application of Sprayed 'Limpet' Asbestos as a functional element of Architectural Design is being received from Architects.

In this announcement we present the following elementary information to provide a firm platform for further detailed enquiries.



an architect asks questions about Sprayed 'Limpet' Asbestos by NEWALLS

REGD.

"What do you consider is the major advantage of Sprayed 'Limpet' Asbestos?"

Probably the most important element is that the 'Limpet' process gives intimate surface contact, sealing all joints, covering rivets, irregularities and protrusions in a continuous coat that entirely eliminates air spaces—a significant factor in itself.

"I understand that Sprayed 'Limpet' Asbestos has two insulating properties?"

Correct. In addition to providing a high degree of thermal insulation, it is an excellent material for absorbing sound. Indeed, many firms have specified the process for correcting acoustic distortions alone.

"Being largely Asbestos, I suppose the process gives a measure of fire protection?"

Most certainly! Again, it is often used solely because of its fireproofing properties. In fact, this method was the first to be approved for Class A fireproofing of ships under the 1948 Convention.

"Being porous, isn't the treatment liable to premature rotting where condensation exists?"

On the contrary. Asbestos is chemically inert. It is rotproof, verminproof and undamaged by water. Condensation is diffused preventing dripping and allowing for speedy re-evaporation to the atmosphere from the warm surface of the coating.

"It seems too versatile for words. It's a Thermal and Acoustic Insulant, rotproof and verminproof, fire-resistant, prevents condensation, resists vibration... anything else?"

Well. It has been used extensively purely as an anti-corrosion measure on metals subject to severe corrosive conditions, but we'd have to know the particular application you had in mind to give our full recommendations.

"Naturally. And if we did want Thermal and Acoustic Insulation—and Fire protection in one coating—I suppose it would cost the earth?"

Frankly—no. You see, the erection of timber grounds is not necessary. In application there is no cutting to waste, and the density and thickness is controllable to a very fine degree by highly efficient operators. It compares favourably with conventional insulation methods and materials.

Sprayed 'Limpet' Asbestos is a particularly suitable multi-purpose insulant in schools, public buildings and the like. Our considerable experience in this field will be gladly placed at your disposal.

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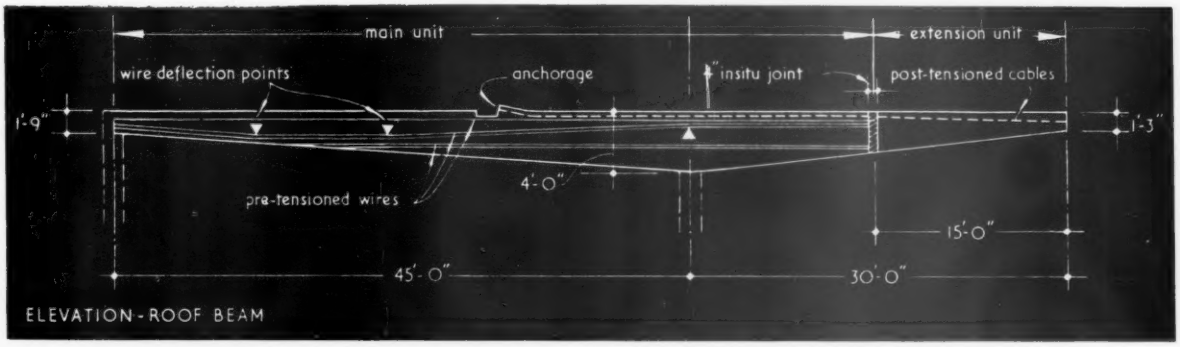
CONCRETE

EXAMPLES OF ECONOMY
IN BUILDING

Fire Station, Twickenham

The roof to the Appliance Room. The beams are at 15′ 0″ centres and span 45′ 0″; they are cantilevered 30′ 0″ to form a canopy.
The initial design was for the usual type of post-tensioned beam construction. On investigation it was decided that it would be more economical to confine the post-tensioning to the cantilevered section only, with the main beams pretensioned. This arrangement reduced work at the site to the minimum.
The final design, which was reached in consultation with Concrete Limited, was for a 15′ 0″ section to be post-tensioned to the end of the main, pretensioned part of the beam, which was thus made as large as possible consistent with handling and transport facilities available. The jointing of the beam 15′ 0″ from its end meant that comparatively few of the prestressing wires needed deflecting; and by laying the roof slabs before stressing the post-tensioned cables in the end section, critical stresses in the main beam, due to bending at the support, were greatly reduced.

Architect: C. G. Stillman, F.R.I.B.A., M.C.C.
Contractors: Prestige & Co. Ltd.



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CONCRETE (SCOTLAND) LIMITED Etna Road Falkirk *Falkirk 2366* Glasgow Sales Office: Elmbank Street, Glasgow C.2 *City 3292* CON.131

'Yoicks!' said Baron Rabbit M.F.H. 'Thought the huntin' was good today.'

'Oh yeth, Baron,' lisped a young lady rabbit. 'But somehow I feel sorry for the foxes.'

'Tsk tsk,' said the Baron. 'They enjoy it. Besides, it's an old tradition – as old as – as – as that Salt Glazed Clay Drainpipe over there!

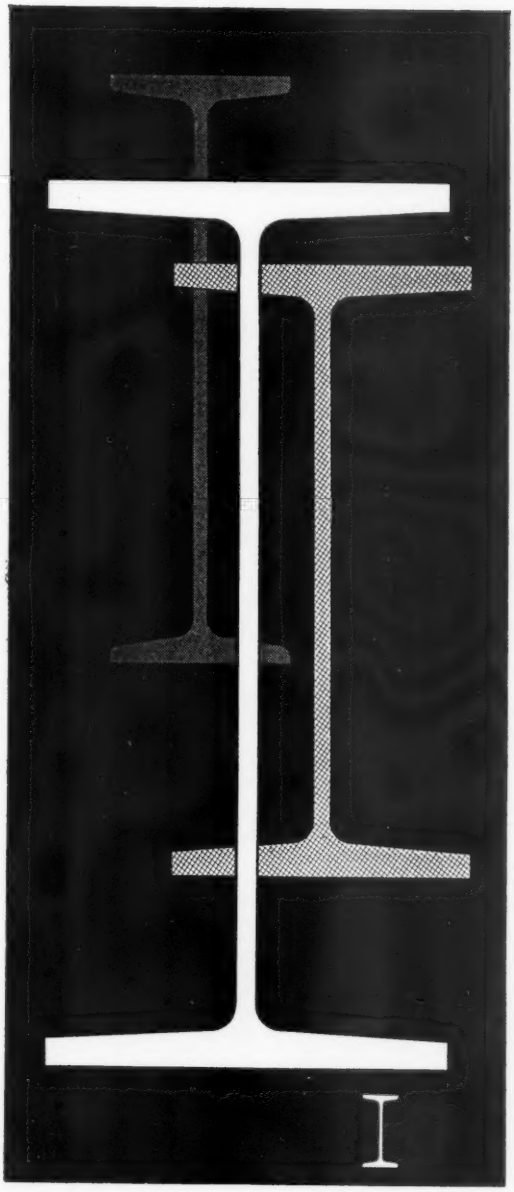
Served as a saddle rail at countless Hunt Balls – been in the family for ages. Understandable, of course; it's strong, impermeable, resistant to all common acids, can't be scratched by grit –'

'You sound like a salesman for Salt Glazed Pipes, Baron!' pouted the young lady rabbit.

'Well, I am in a way, y'know,' replied the Baron.

Salt Glazed Clay Pipes–for drainage, for ever

NATIONAL SALT GLAZED PIPE MANUFACTURERS' ASSOCIATION



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BRITISH STANDARD SECTIONS

Sections from our Universal Beam mill range from the much needed 'H' sections 6 in. by 6 in. up to the largest beams in Europe.

These sections, available in different 'weights' giving different load-carrying capacities, eliminate much plating and compounding of girders.

In addition to Universal Beams, the mill can roll British Standard sections. The illustrations show interesting comparisons on the same scale.

On the left is the 24 in. by 7½ in., the largest of the British Standard range; to the right is the 24 in. by 12 in. beam, hitherto the largest rolled in this country, but now available in three weights: 160, 120 and 100 lb. per foot; the centre beam is 36 in. by 16½ in., the largest in Europe, and is available in two weights, 260 and 230 lb. per foot. Equally valuable are the new 'families of columns', which, like the beams, avoid the need for flange plating.

The little section is the B.S. 3 by 1½ in. (4 lb.), to the same scale as the others and is the smallest I *section rolled by the company.*

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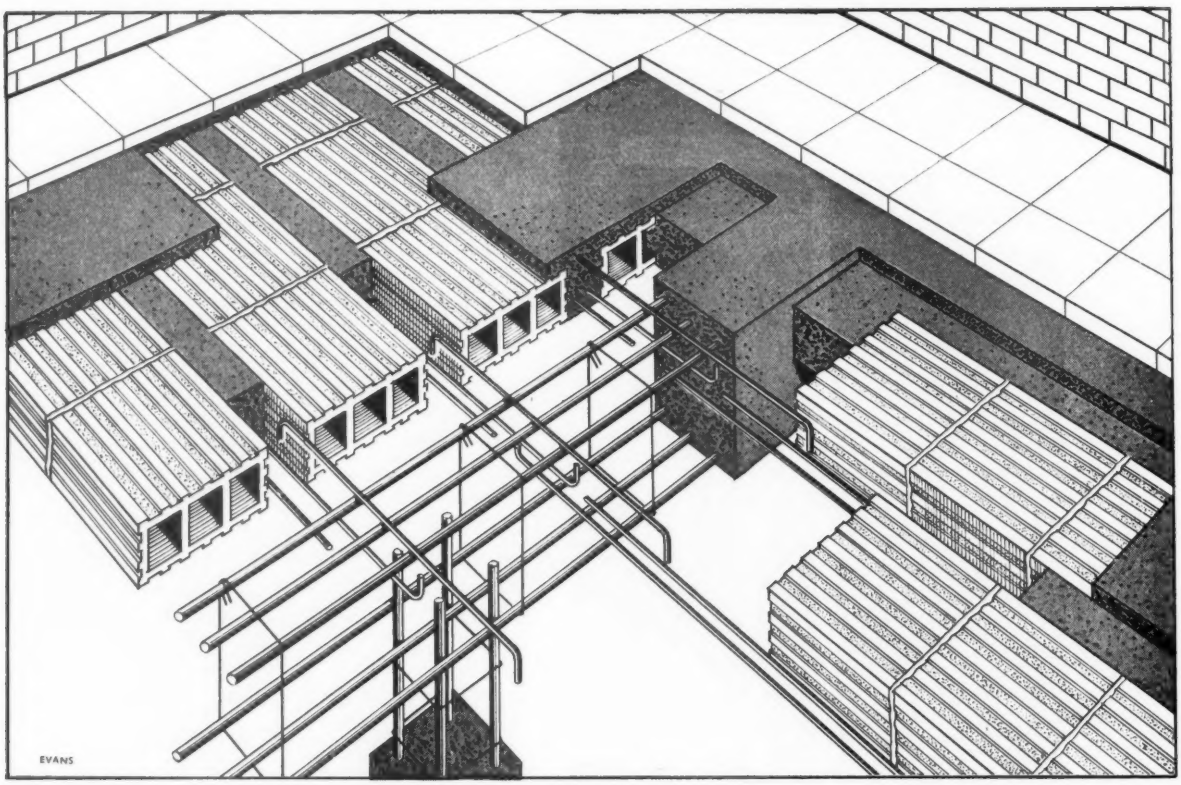
'PHORPRES' HOLLOW CLAY FLOOR BLOCKS

and the IN SITU HOLLOW TILE FLOOR



We wish to thank the Kleine Company Ltd., for their co-operation in the compilation of this advertisement.

THE PRODUCT The depth of a Hollow Clay Block Floor, the thickness of the topping or screed of concrete above the blocks, the width of the beams or ribs between rows of blocks and the size, the number and location of the reinforcing steel placed in the ribs, are all governed by the span of the floor and the loading it has to carry. 'Phorpres' Hollow Clay Floor Blocks are specially made for *in situ* floor construction; they are all 12″ long by 12″ wide, but they are available in eight different thicknesses ranging from 3″ to 10″ in multiples of one inch, so that any normal span and loading can be accommodated. All the blocks are grooved to give a good dovetail key, both for the ceiling plaster and for the *in situ* concrete. Filler Tiles, which are also grooved, are available to provide a burnt clay soffit to the ribs, so that the floor can be given a completely all-clay soffit with its attendant advantages. These Filler Tiles (which can also be used as panel heating tiles) are made in three sizes: 12″ × 3″ × $\frac{5}{8}$″, 12″ × 4″ × $\frac{3}{4}$″, 12″ × 5″ × $\frac{5}{8}$″.

METHOD OF CONSTRUCTION To build an *in situ* Hollow Tile Floor, 'Phorpres' Floor Blocks of a suitable depth are laid end to end in rows on temporary shuttering of steel or timber. The rows of blocks are so spaced that the gaps between rows correspond to the designed width of the reinforced ribs. If an all-clay soffit is required, Filler Tiles are laid at the bottom of the position, good quality concrete is carefully placed around the reinforcement, in the rib space, and over the top of the blocks (to the thickness of topping required by design), all in one operation. After the necessary time needed for the concrete to gain strength, the temporary shuttering is removed, leaving an all-clay soffit ready to receive the plaster.

THE ADVANTAGES ***Strength.***—Properly designed *in situ* Hollow Tile Floors posses great strength combined with light self-weight. The good bonding between the concrete and the grooved blocks ensures that the stresses from concentrated loads are well spread over the structure, and the monolithic character of the floor makes it particularly suitable where vibrations from sources are to be expected.

Adaptability.—The *in situ* Hollow Tile Floor can be designed for wide spans without intermediate supports. Moreover, bays need not necessarily be rectangular on plan and can be constructed to almost any plan shape without undue extra cost. Cross-reinforced floors, needing no secondary beams, may be built with uninterrupted soffits. The Hollow Tile Floor, with its strength and weight-saving properties, is also particularly suited to the construction of cantilevered balconies, etc.

Heating.—Panel heating, heating coils, air-conditioning ducts and mains services may be incorporated in the floor during the construction stage.

Fire Resistance.—Protection to the concrete and reinforcing steel, provided by the fired Clay Blocks and Filler Tiles, gives the *in situ* Hollow Tile Floor excellent resistance against fire.

A hollow tile floor is a quality floor

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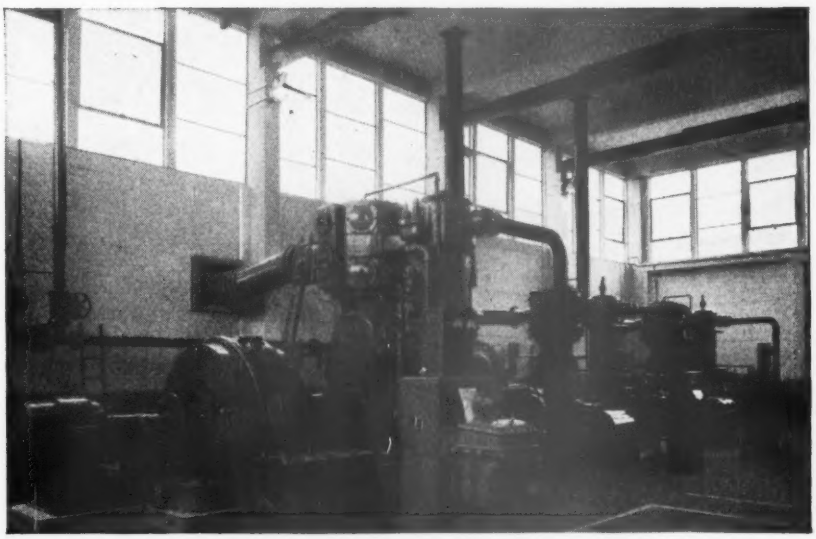
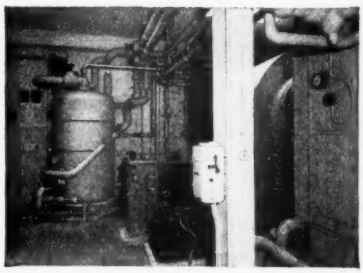
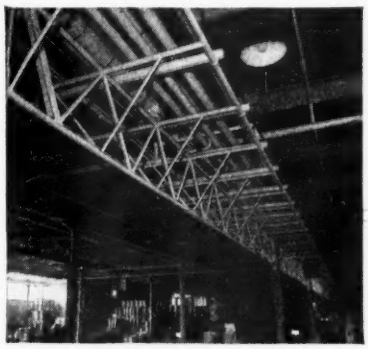


THREE AIR COMPRESSORS ATLAS-COPCO COMPLETE WITH ALL SERVICE PIPEWORK *installed by E.S.I. at the Pressed Steel Company's factory, Swindon.*



FAN-CHAMBER AND HOT WATER SUPPLY CALORIFIER *installed by E.S.I. at a Technical College in Kent.*



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Specialised skill in every branch of modern service installations is provided by E.S.I. Where a project calls for one or many different services E.S.I. can provide the unique advantages of co-ordinated planning carried out from start to finish by a single team working under one direction. This dovetailed planning at every stage means smoother and speedier site operations with greater regard to overall design and resulting economy in overall costs.

The system has proved its value in many industrial, commercial and domestic installations at home and overseas.

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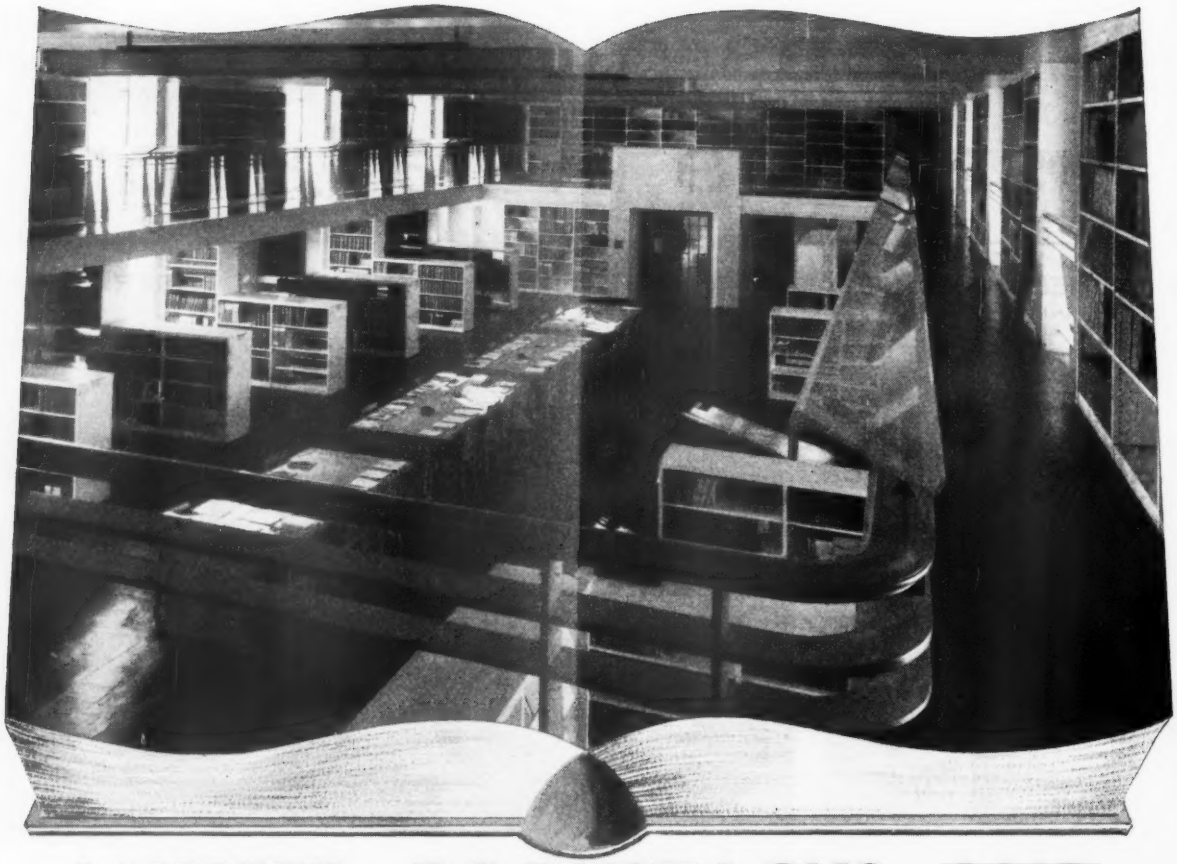

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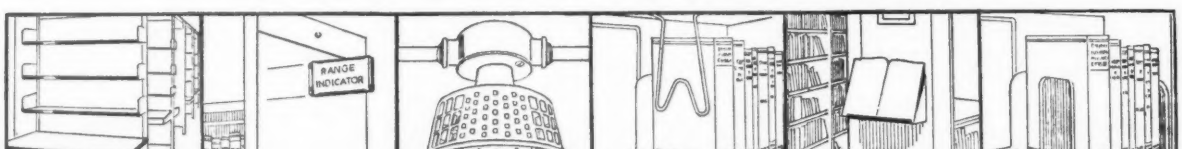
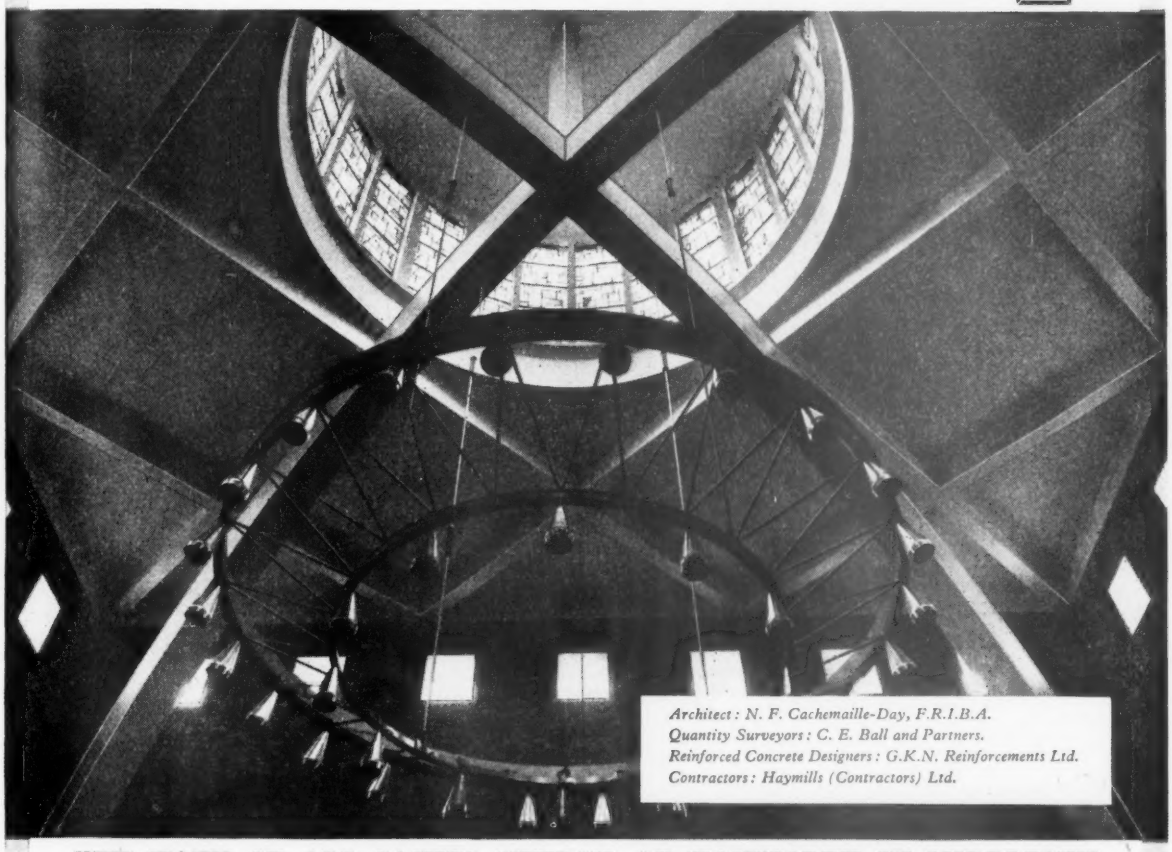


DESIGNS IN CONCRETE 2



Architect: N. F. Cachemaille-Day, F.R.I.B.A.
Quantity Surveyors: C. E. Ball and Partners.
Reinforced Concrete Designers: G.K.N. Reinforcements Ltd.
Contractors: Haymills (Contractors) Ltd.

THE NAVE OF ALL SAINTS CHURCH, AT HANWORTH IN MIDDLESEX

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Two slender arches span diagonally across the nave, supporting a ring beam and the lantern above. The roof is of beam and slab construction, the beams spanning diagonally from the ring beam to the walls.

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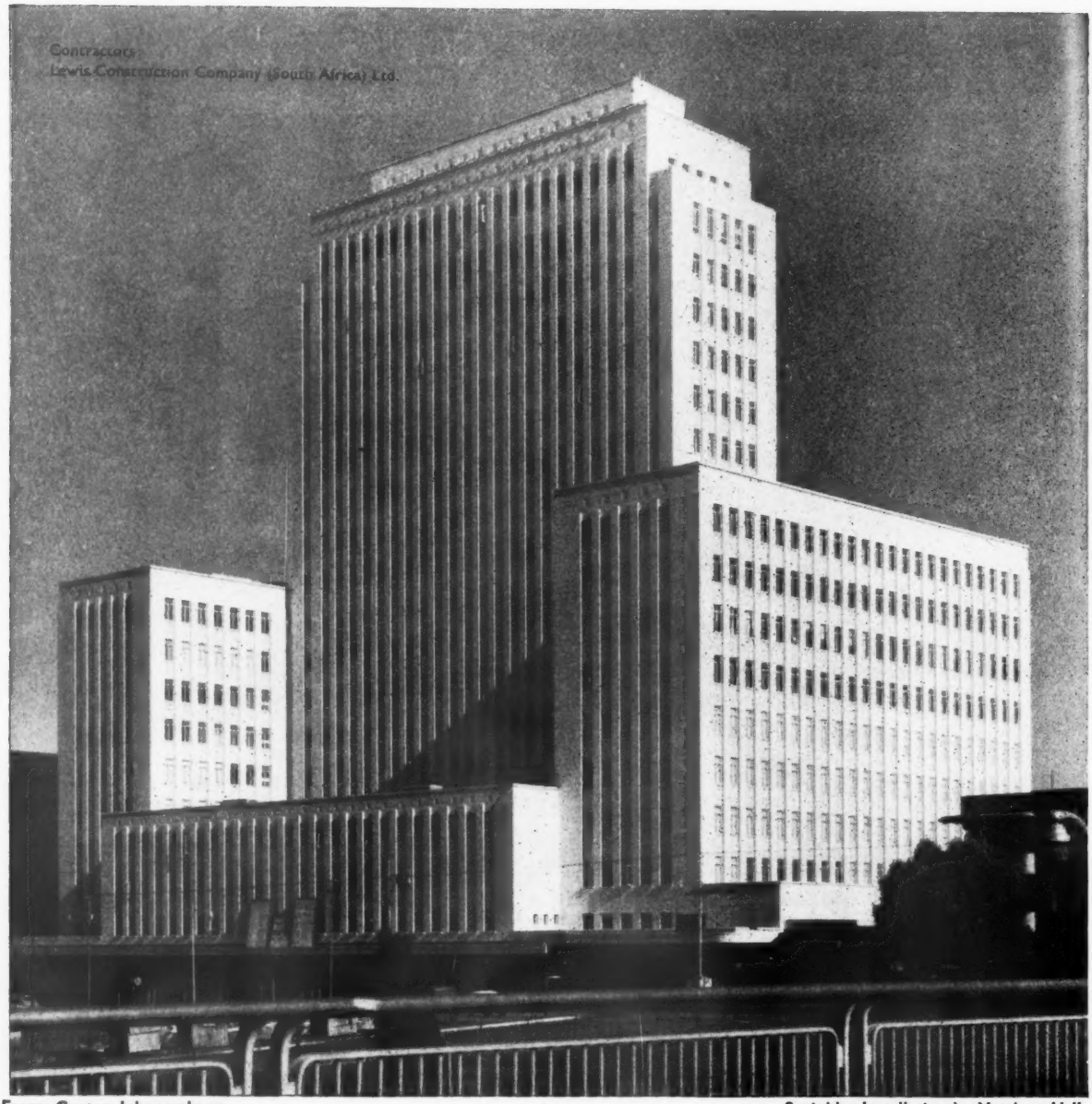

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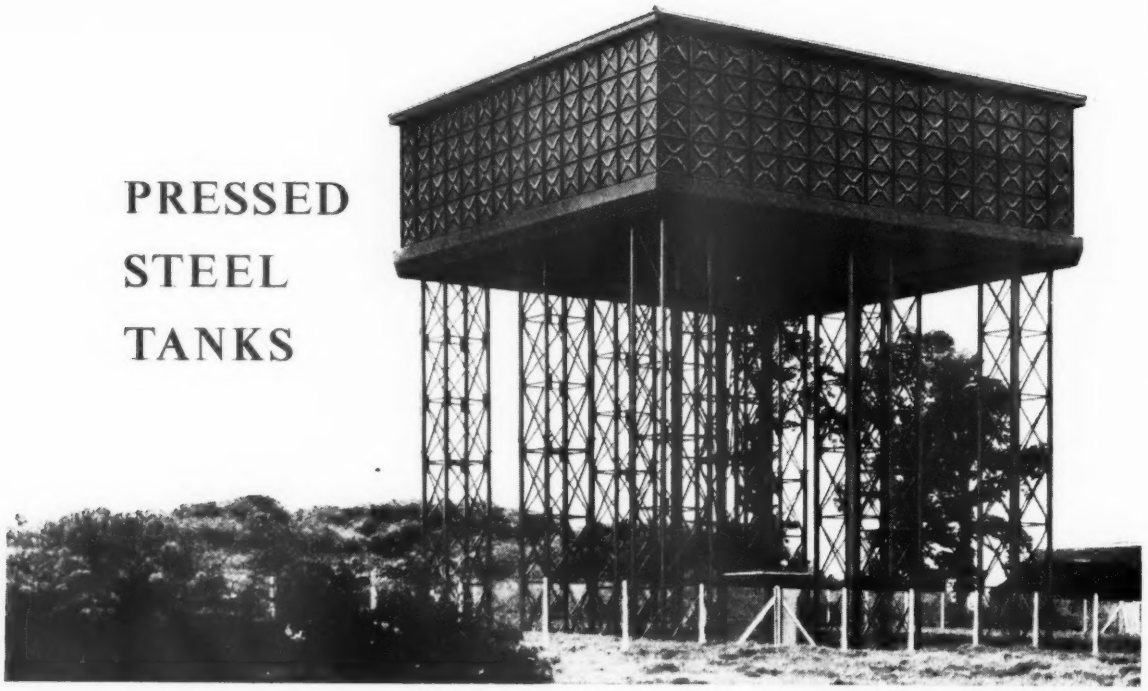
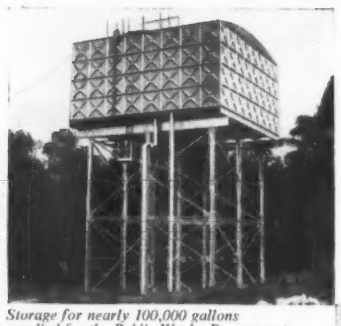


Storage for 340,000 gallons at 52 ft., Southam, Warwickshire. Consulting Engineers W. Herbert Bateman & Partners.



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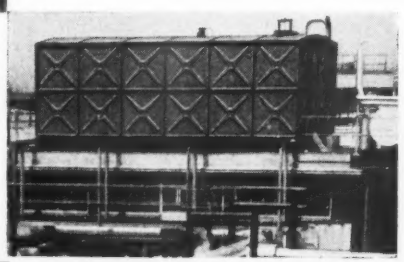
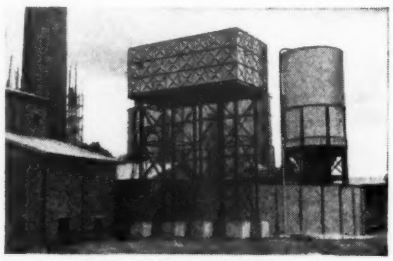


Supported on steel grillages, one of many covered tanks erected at a power station near London. Consulting Engineers Merz & McLellan.

Storage tank for softened water at the Isle of Grain Oil Refinery. (Photograph courtesy Tothill Press Ltd.)



Industrial development, Malaya. Water storage tank at the new works of Malayan Cement Ltd.

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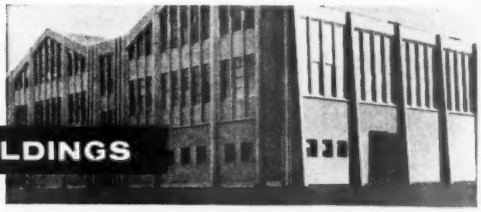

Central Engineering Works for Bryant & May Ltd by Beecham Buildings Ltd, Shipston-on-Stour, Warwickshire. Architects: Hastie, Winch & Kelly.
All prefabricated concrete components used in the construction of this building are treated with a water-repellent solution based on DRI-SIL 29.

...OLD BUILDINGS

All Saints Church, Hastings, mainly 14th century but contains older walling, part prehistoric. With passage of time the penetration of water through the walls has become more prevalent, resulting in the usual decay and fungus. Water penetration has been stopped with DRI-SIL silicone solution. (By courtesy of the Rector and Consultant Architect).

DRI-SIL silicone masonry treatments

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- ★ Improve the thermal insulation of buildings by preventing the absorption of moisture by the walls.

...BRIDGES & ROADS

Highway overpass after a rain storm. The treated part of the concrete fascia (right) has not absorbed the water and is much more visible than the untreated section on the left. Silicone treatments also prevent spalling or scaling due to frost action on concrete road surfaces.

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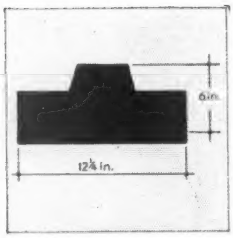

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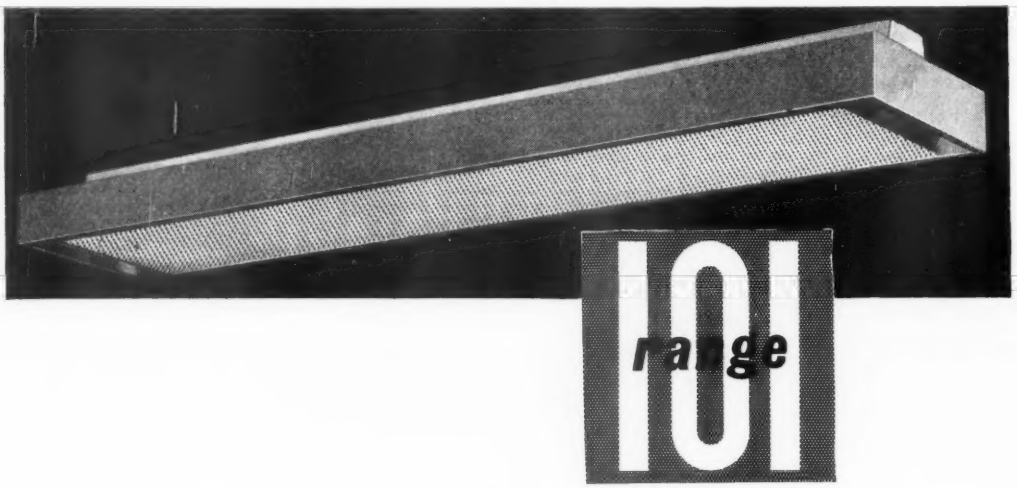

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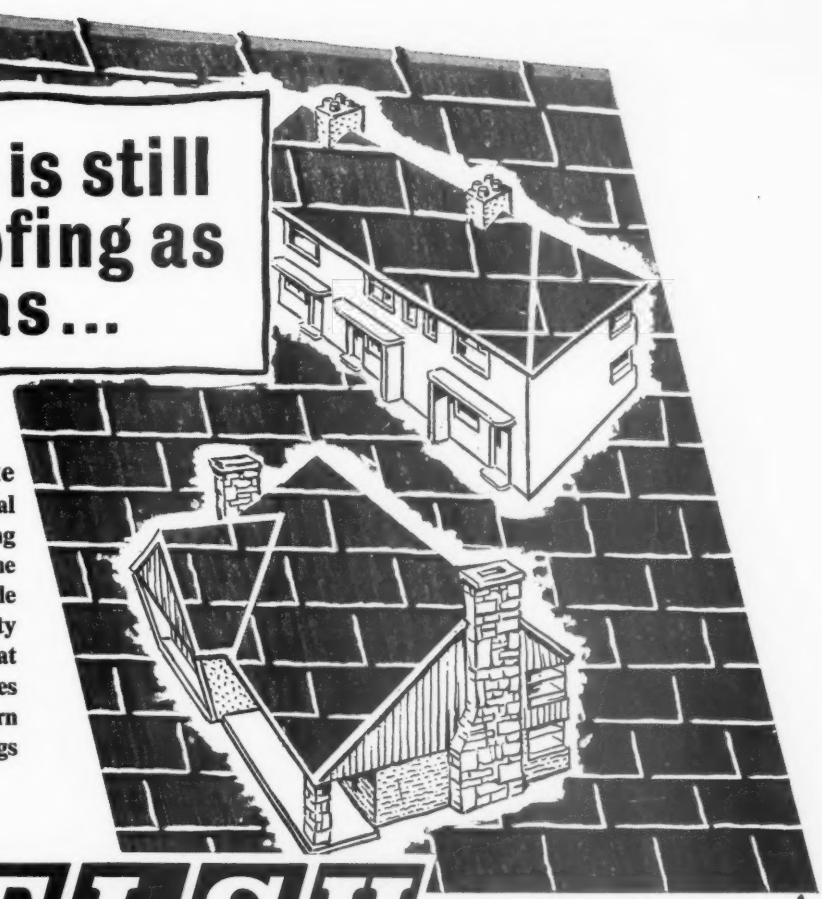

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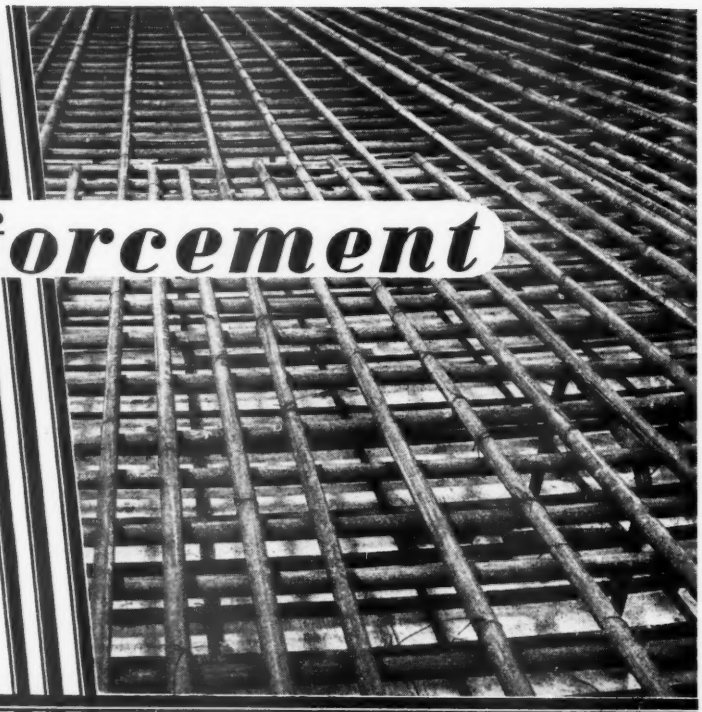

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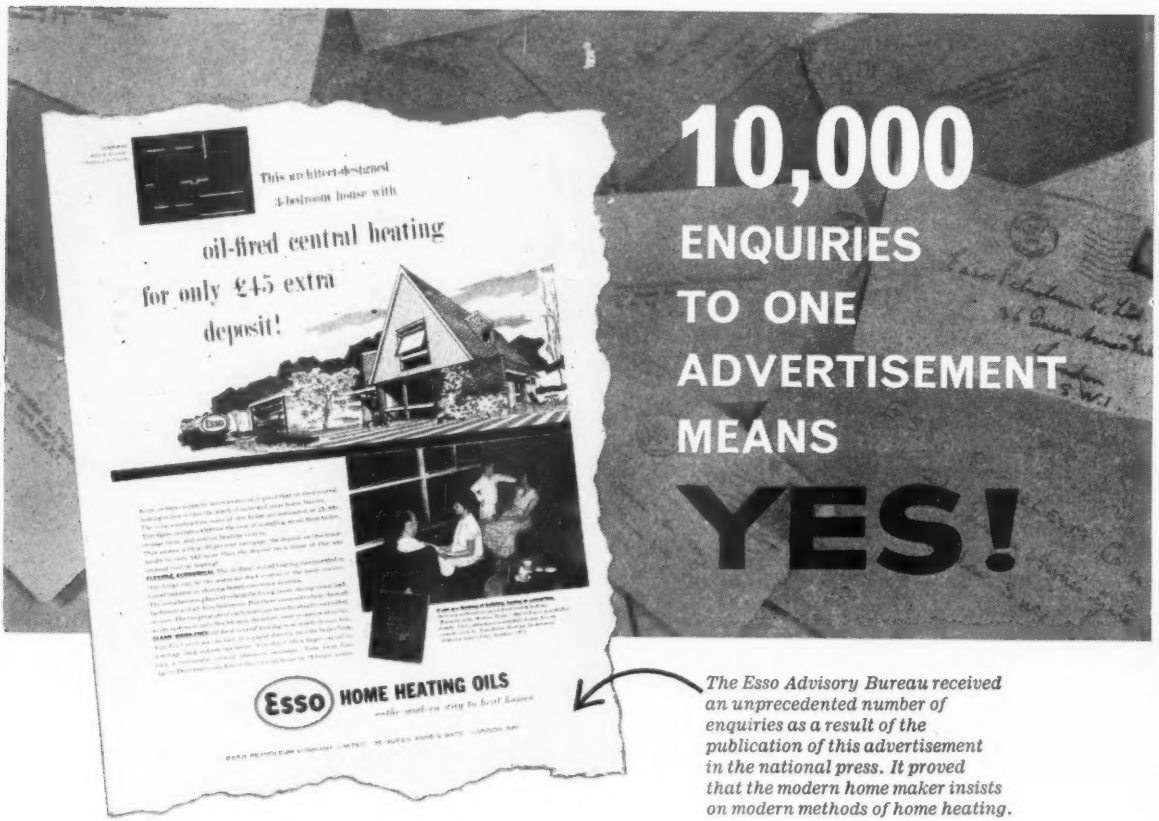

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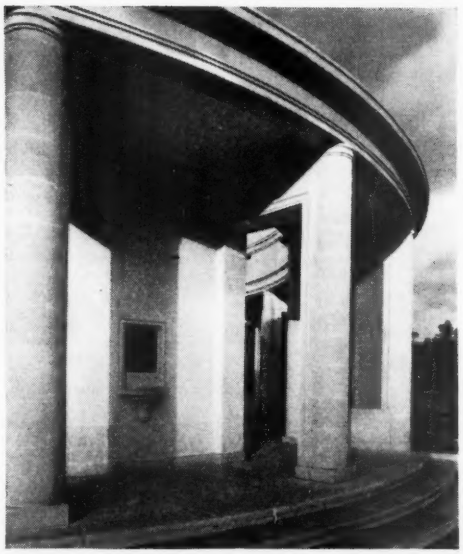

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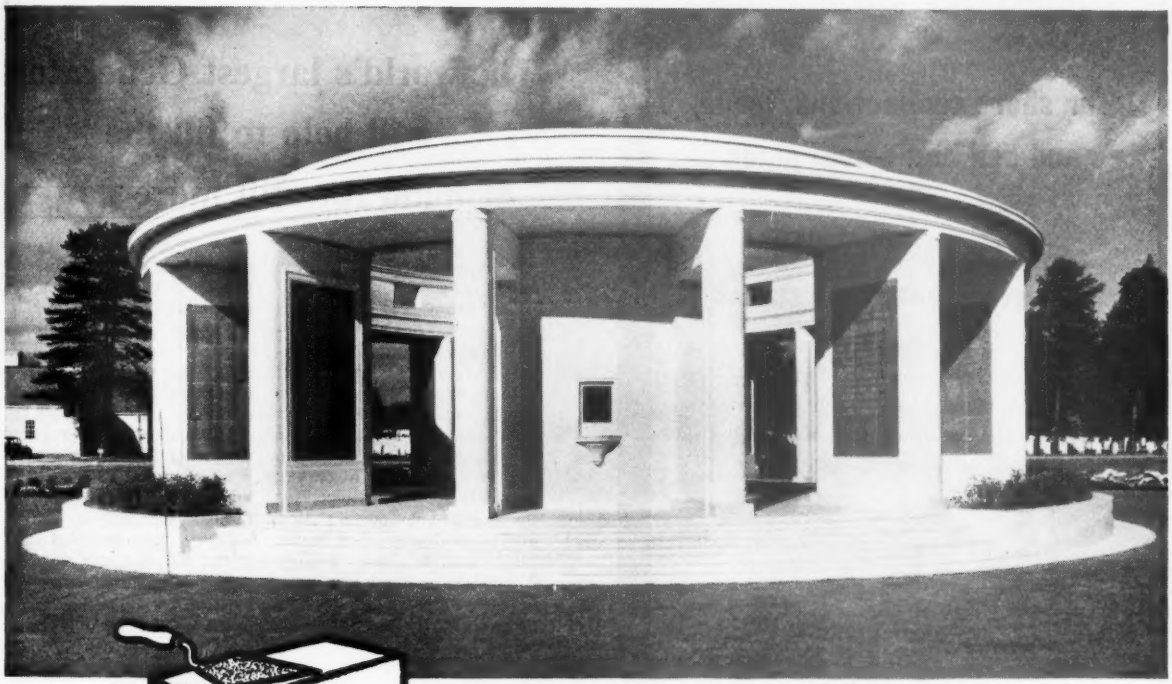

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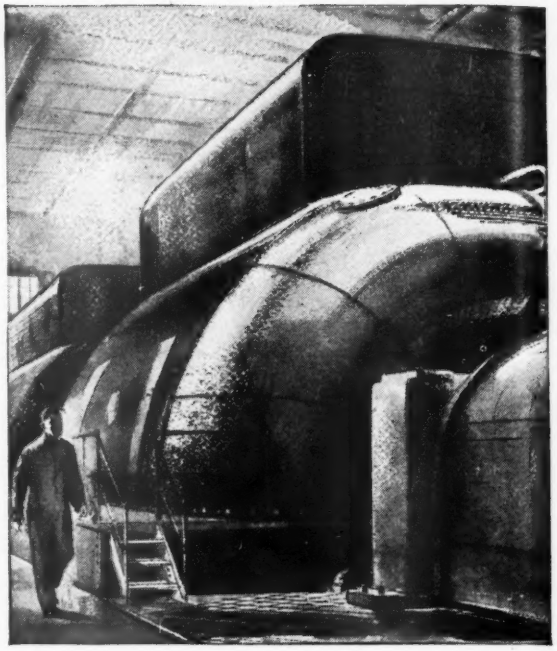

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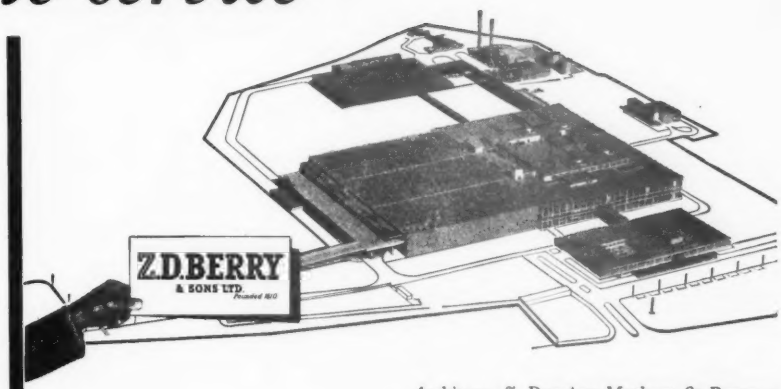

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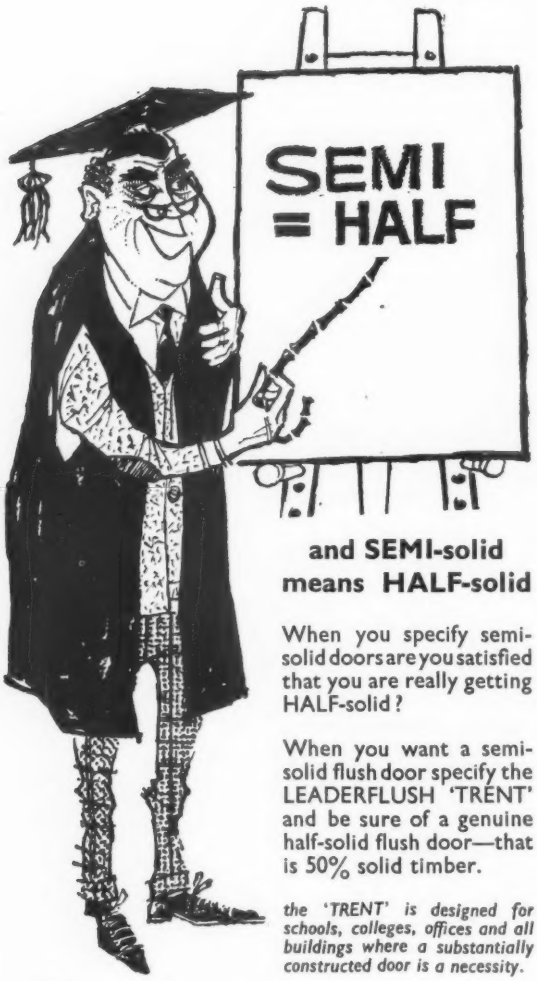

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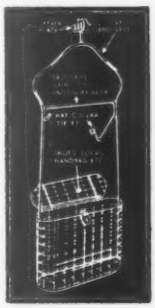

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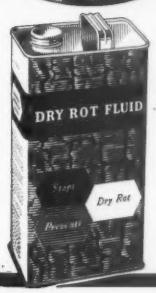

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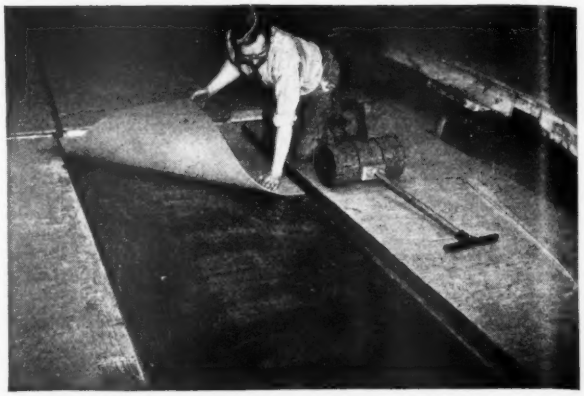

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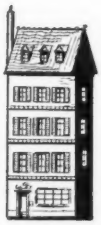

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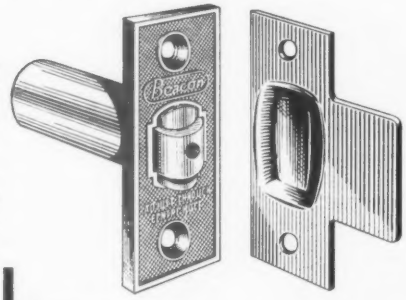

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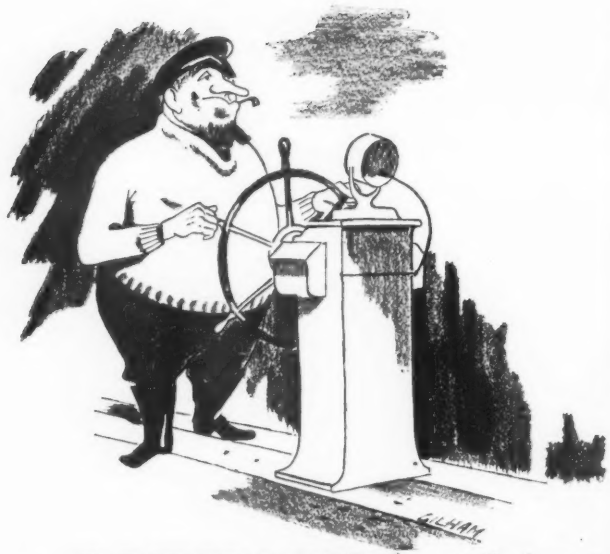

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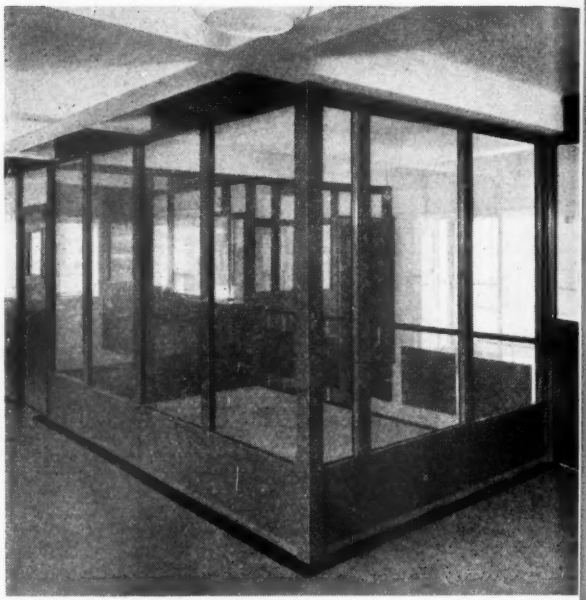

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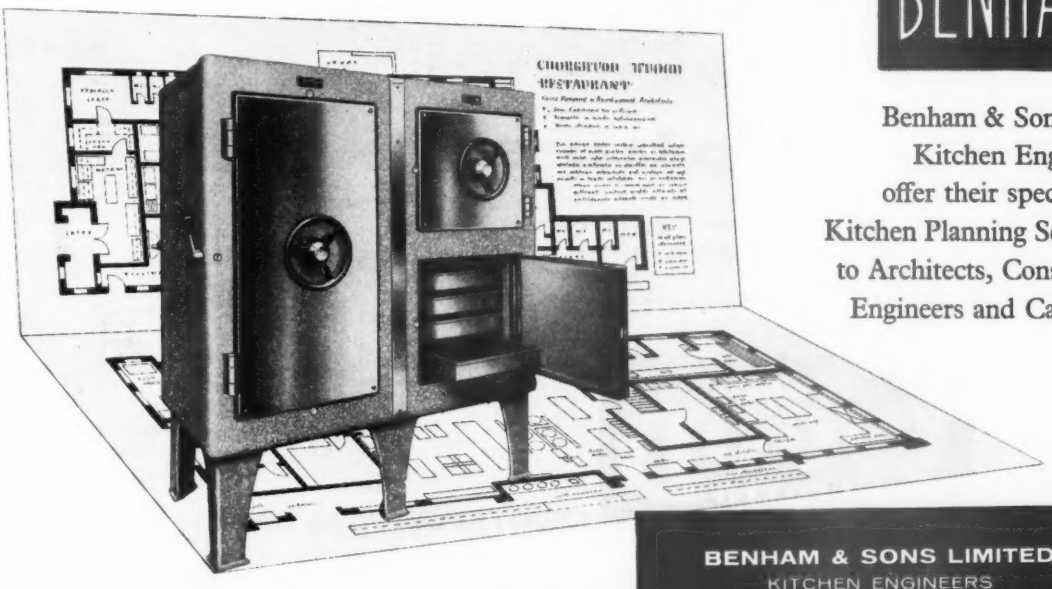

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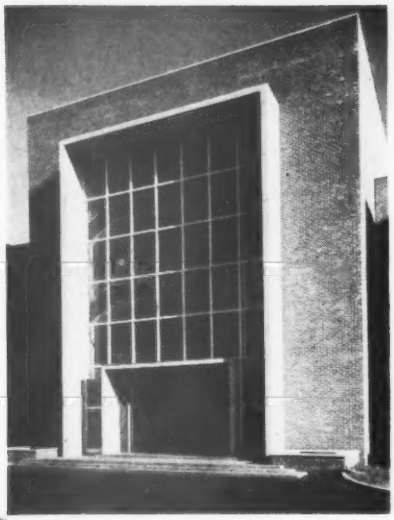

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BUILDING RESEARCH STATION DIGEST 125

August 1959

Small Underground Drains and Sewers: II

THIS Digest and the previous one review the design and construction of drains and sewers in the light of recent studies. Part I (Digest No. 124) was concerned with their structural design; Part II deals with watertightness, flexible joints, site work, and testing. The advice given in these Digests supersedes any corresponding advice given in Digest No. 55 (1953), more particularly as regards the use of site concrete and methods of jointing.

Watertightness and secondary loading

If a pipeline is to be watertight throughout a long life it must not crack and its joints must retain their efficiency. Despite adequate field strength it may be fractured by secondary loads and forces, some of which may arise even before the pipes are buried. Stresses are imposed by careless handling, bad stacking, joint pressure and uneven heating. Damage in handling and stacking may be eliminated by ordinary care. Joint pressure is responsible for *burst sockets* (Fig. 1b) and is very common where cement mortar joints are used with ceramic pipes. With a rise in temperature or moisture content, the jointing mortar swells more than the ceramic pipe socket, so tending to stretch the socket circumferentially. Thermal cracking usually occurs after jointing and before backfilling, whereas moisture cracking occurs some considerable time after backfilling. Thermal cracking is also caused by hot effluents or proximity to sources of heat such as furnaces. Conversely, a fall in temperature cracks the mortar. In either case, tree roots may enter the cracks and make matters worse. These troubles can be avoided by the use of a resilient jointing material such as rubber. Bituminous compositions have also proved successful; and, in the presence of moisture and the absence of tree roots, even puddled clay is preferable to mortar. The sockets of cast-iron pipes may be similarly burst by over-caulking and the collars of pitch-fibre pipes by over-driving.

Uneven heating or cooling of brittle pipes, for instance by the sun or cold air, tends to distort their circular section, so setting up circumferential bending stresses. With sufficiently high temperature variation the pipes split lengthwise (Fig. 1c), usually where they are hottest or coldest. This *distortion fracture* is not uncommon in ceramic and concrete pipes with any type of joint. It may occur to pipes lying in stockyards or on site before laying. The remedies are to shade the pipes from the sun and to protect them from sharp falls of temperature, which mainly occur at night in spring and autumn. Concrete pipes may be dried on top by the wind or sun while still wet at the bottom and so suffer similar fracture.

If brittle pipes with rigid mortar joints are not bearing uniformly on their bed over the whole of their barrel length (e.g., if they rest on their sockets) or if the foundation offers non-uniform resistance, the pipeline after backfilling is compelled to act as a beam spanning from one point of support to the next. Under a very small vertical deformation the pipes suffer *beam fracture* (Fig. 1d). Similar fractures occur in

pipes laid in clay soils at shallow depth, up to about 5 ft., owing to the seasonal shrinking and swelling of the clay with changes of moisture content. The extraction of water from clays by the roots of trees and shrubs may cause similar movements in any direction at even greater depths. These soil moisture changes, or general thermal changes, or the differential lengthening or shortening of continuous site-concrete cradles or surrounds of ceramic pipes, also cause direct axial tension in rigidly jointed brittle pipelines, resulting in *pull fractures* (Fig. 1e).

If brittle pipes are rigidly connected into the wall of a manhole or other structure, differential settlement will tend to fracture the pipe in shear (Fig. 1f). If large relative movements occur, as in mining subsidence, or sometimes in made ground or marshy land, the pipeline may be stretched or shortened by as much as 1 per cent or more of the length, which no rigidly jointed brittle pipe is capable of tolerating without fracture.

These troubles may be largely if not entirely avoided in brittle pipes, including cast-iron, by:

(1) using flexible-telescopic joints of the rubber-ring or bituminous types, including joints to manholes;

(2) providing ample clearance all round a pipe passing through a wall;

(3) eliminating hard and soft spots in the foundation and ensuring the uniform bedding of the pipes, which should never rest on their sockets;

(4) providing a gap in any site concrete at all pipe joints so as not to impede their flexible-telescopic action.

With flexible pipes such as steel or pitch-fibre (with telescopic joints where large movements may occur), precautions (2) and (3) will suffice. These pipes do not crack but pitch-fibre pipes may be distorted or have their joints loosened in circumstances that would fracture brittle pipes.

Another type of fracture occurs with all types of pipe if they are permitted to ride on isolated packings, such as bricks, stones, or timber. If such packings are used to obtain the correct fall on the pipe, it is essential that they be removed before backfilling, otherwise *bearing fractures* (Fig. 1g) will certainly occur in brittle pipes, and pitch-fibre pipes may be flattened. The type of under-bed shown in Figs. 2 and 3 of Digest No. 124 avoids similar fractures caused by large stones or boulders, left in or near the surface of the foundation, which may also be the cause of beam fractures.

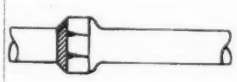
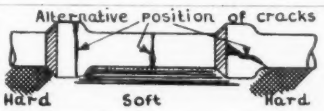
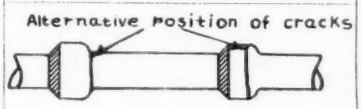
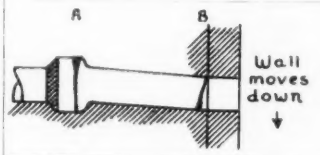
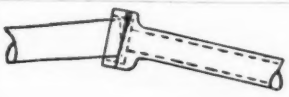
Flexible-telescopic joints

Rubber 'O' ring joints have been used for concrete and asbestos-cement pipes for many years and have proved their efficiency. A new slide-in multi-lip rubber ring is now available for concrete pipes. An adjustable roll-on rubber ring has recently been introduced by the British Ceramic Research Association for ceramic pipes (the sockets for use with such rings should not be grooved), and a slide-in rubber ring is now available for spun iron pipes. In using these rings, the pipemaker's instructions should be followed carefully; only rings supplied by or through the pipemaker should be used. 'O' rings for different makes of pipe must not be mixed up, lest burst sockets or leakage occur through the insertion of oversize or undersize rings. For normal sewage, the rubber must comply with B.S. 2494. For some industrial wastes special artificial rubbers are necessary. The suppliers of the rings should be forewarned of unusual effluents.

Considerable time is saved on site by the use of these rings, and hydraulic or air tests may be made immediately after the completion of a run, thus facilitating early backfilling with all its advantages. The rings also facilitate aligning small-bore pipes after jointing, and enable the joints to tolerate considerable slew and draw without loss of watertightness; such movement, however, must not be impeded by continuous site concrete or by excessive slew during laying (Fig. 1k). The practice of mortaring up the annulus outside the rubber ring is to be avoided since it impedes the free action of the joints and may cause burst sockets. Puddled clay or fine soil may be used for this purpose where the ingress of gravel or stones from the fill might jam the joint.

Most of these types of rubber ring have been tested under Station supervision and have proved very satisfactory as regards both watertightness and flexibility. They are recommended for normal use in place of mortar

Fig. 1. TYPES AND CAUSES OF BRITTLE PIPE FRACTURES

Type of failure	Appearance	Cause	Preventive measures
(a) Overload fracture (see Digest No. 124)		Excessive vertical load or inadequate bedding	Higher bedding class, or stronger pipe, or concrete surround
(b) Burst socket		Differential thermal or moisture expansion of jointing mortar	Resilient jointing material which does not cause excessive radial pressure on the socket
(c) Distortion fracture		Differential heating or cooling or moisture content	Protection of uncovered pipes against sun or cold night (or drying wind, with concrete pipes)
(d) Beam fractures		Uneven resistance of foundation, or soil movement, or differential settlement	Flexible joints and uniform hardness of foundation
(e) Pull fractures		Thermal or drying shrinkage of pipe or site concrete, drying shrinkage of clay soil	Flexible-telescopic joints and gaps in site concrete at pipe joints
(f) Shear fractures		Differential settlement of wall relative to pipe or/vice versa	Flexible joints at least at A and B and making AB not more than 3 ft.
(g) Bearing fracture		Hard spots in pipe bed	Elimination of hard spots
(h) Thrust fracture		Restrained thermal or moisture expansion of pipe or compression due to subsidence	Flexible-telescopic joints which do not cause excessive radial pressure on the sockets. Spigot end not hard up in socket
(k) Leverage fracture		Excessive angular displacement	Avoidance of excessive slew when laying

Types of failure b, d, e and f may occur with rigid (e.g. cement mortar) joints.
Type k may occur with flexible (e.g. rubber ring) joints.
The other failures are uninfluenced by type of joint.

joints, which have been directly responsible for many failures.

Site work

The backfill and uniform surcharge loads on a pipeline depend on the width of the trench *at the crown of the pipe*. This width should therefore be kept as narrow as possible: for pipe diameters 4, 6, 9 and 10 in., it should not exceed $1\frac{3}{4}$, 2, $2\frac{1}{4}$ and $2\frac{1}{2}$ ft. respectively. Above the crown of the pipe, the trench may be of any convenient width. In deep untimbered or V-trenches, except in rock, the toe of the spoil heap should not be nearer the trench side than twice the maximum depth of the trench; otherwise serious slips may occur.

About half the field strength of pipes laid with Class B bedding (Fig. 2 in Digest No. 124) depends upon the proper preparation and packing of the bed under and around the pipe. With Class A 120 bedding, or site-concrete surrounds, some two-thirds of the field strength depends on the quality of the site work. Flexible pipes, such as pitch-fibre, depend for their field strength on uniformity in their bedding and in well-compacted side fill, for which purpose only selected material, preferably granular and passing $\frac{3}{4}$-in. ring, should be used.

Line and level should be treated with due respect; nevertheless, soil movements will disturb them both in course of time. These deformations must be tolerated, since, in most soils, any attempt to prevent them by means of rigid joints or continuous site concrete will result in fracture of the pipes. When making flexible joints, especially in mining areas, a sufficient gap should be maintained between the spigot ends and socket shoulders to permit the pipeline to shorten when necessary, or individual pipes to expand thermally or by absorbing water. If the pipes are butted hard up, compressive forces may cause *thrust fractures* (Fig. 1h).

Care is needed, as mentioned above, to protect all naked pipes from non-uniform temperature changes, and concrete pipes from drying winds. Backfilling sufficient to cover the pipes should therefore be placed as soon as possible after laying.

Backfilling under roads is a structural operation, and should be treated as such. A lightly hand-tamped layer of selected material, preferably granular and not containing any large stones or other hard objects, must be laid immediately above any type of pipe, to act as a shock absorber for the compacting operations in the fill above and to relieve some of the load on the pipeline. Above this level, compaction should aim at the same density and moisture content as those of the undisturbed soil in the trench sides, so as to avoid subsequent settlement and consequent disturbance to the road surface and to any underground works in or near the trench. If the latter works are supported less or more by the backfill than by the undisturbed soil into which they pass, they may be fractured. It is not sufficient just to push the soil back into the trench; in deep trenches such careless filling may even cause overload fractures of the pipes. For Class A 120 bedding and surrounds, the main fill must not be placed until the site concrete has reached a crushing strength of at least 2000 lb/sq. in.

Construction traffic should not be permitted over shallow trenches unless they are properly bridged. Road traffic is preferably kept off trench lines until the road bed has been properly constructed or reinstated.

Testing

The customary single internal pressure (hydraulic or air) test of a pipeline after jointing and before backfilling is no guarantee of a watertight line after backfilling, especially where mortar joints are used. It should be regarded merely as a test of the joints and the soundness of the pipes *at that stage*, and should preferably be followed by exfiltration and/or infiltration tests about a year after laying and when the ground water is at its highest level, wherever this is above the pipe invert. Finally, with mortar joints, acceptance tests should be delayed as long as possible, and certainly for not less than a year, in order that the annual cycle of soil movement may have its effects. Tests should also be repeated after clearing a blockage or making repairs, and preferably as routine maintenance at regular intervals of two or three years.

Depending on the nature of the soil, groundwater level, and other local conditions, infiltration may be more serious than exfiltration.

Where this is so, the usual internal pressure test under a small head of water or air may be quite misleading. A simple observation of flow at night (i.e. when the flow load is small) will usually reveal whether infiltration is occurring. Conversely, in porous soils with a low water table, there will be little or no infiltration, and exfiltration tests are essential. Good judgement, and familiarity with local conditions, including the public sewerage system and method of sewage disposal, are therefore important in planning an appropriate and effective test specification, and in deciding upon the action to be taken as a result of the tests. Allowable tolerances of exfiltration and/or infiltration are sometimes specified by the local authority responsible for sewerage in terms of volume per unit of time per unit of length per unit of pipe diameter, but compliance with such requirements should not be blindly accepted as evidence of satisfactory watertightness.

In general, good design and adequate inspection and testing during construction are better and cheaper than cure of leakage, especially under roads and with deep pipelines.

Digest No. 63. Nails for slates and tiles

In the question and answer relating to nails for slates and tiles this Digest stated that aluminium alloy nails were not mentioned in British Standard Code of Practice CP.142: 1951. The revised (1958) edition of this code now refers to the use of alloy nails and notes their suitability for this purpose. There is now experience of their successful use in this country since 1950.

Digest No. 123. Sulphate attack on brickwork

Attention is drawn to the fact that lime must not be mixed with high alumina cement. Ground chalk may be used in place of lime (See Digest 27).
Corrigendum; footnote p. 123/1—For 'alumina' read 'aluminate'.

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